25X1
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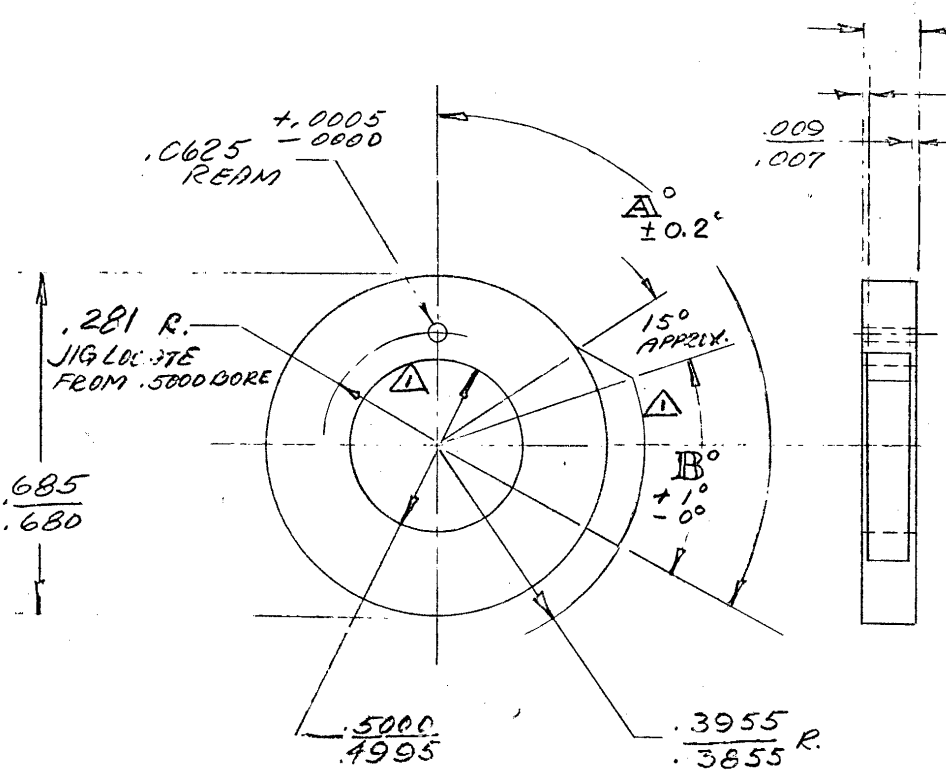
DWG. NO. A-125415 ISSUE XP



PART NO.	A	B
A-125415-1	335.9°	68.6°
-2	72.9°	48.6°
-3	121.5°	
-4	170.1°	
-5	218.7°	
-6	267.3°	

△ CONC. .0005 T.I.R.

FACE RUNOUT .0005 MAX.

DIMENSIONS AFTER PLATING

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(1) EACH REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES

SCALE —

1ST. CONTRACT

MATERIAL: PHOSPHOR BRONZE

FINISH: SILVER PLATE .0006 MIN. THICK.

NET WT. GR. WT.

STAT: CAM OK D.C.

CHANGE	ADD FINISH
DATE	
DFTSMN	
CHKD	D.L.C. 3-14-53 E.J.E. 3-24-53
ENG.	

DRAWN GB DATE 14 AUG 51 | ENG. APP. DATE

CHECKED DATE | APPROVED DATE

DWG. NO. A-125415 ISSUE XP

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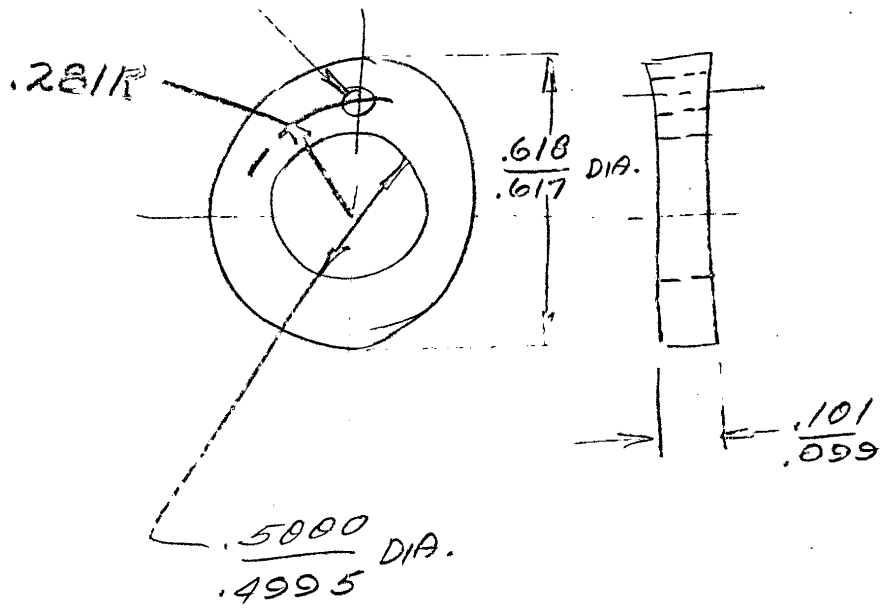
DWG. NO. A- 125416 ISSUE XP

.0625 -000 REAM
JIG DRILL #REM'D WITH JIG USED FOR CDAA A-125415



FACE RUNOUT .0008 MAX

HOLE CONC. .0005 T.I.R.

DIMENSIONS AFTER PLATING

STAT

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USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	RING OK D.C.
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	PHOSPHER BRONZE	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE: ADD FINISH		FINISH	
DATE		SILVER PLATE .0006 MIN. THICK.	DRAWN: DATE 19 AUG 51 / ENG. APP. DATE
DFTSMN			CHECKED DATE / APPROVED DATE
CHKD: D.L.C. 7-24-53 E.J.E. 3-24-53			
ENG.		NET WT. / GR. WT.	DWG. NO. A-125416 ISSUE XP

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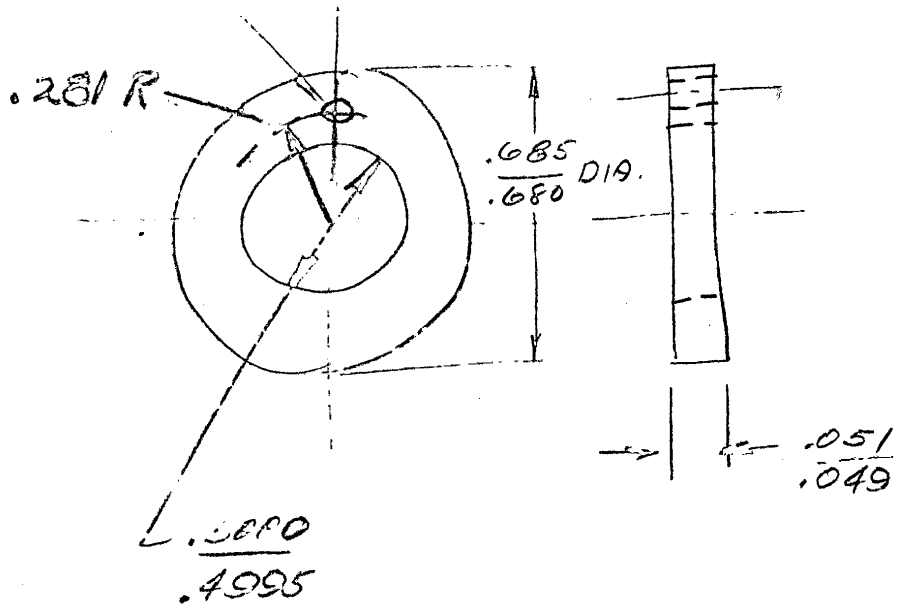
DWG. NO. A-125417 ISSUE XP

-.0625 - 0000 REAM

JIG DRILL & REAM WITH JIG USED FOR CAM A-125415



FACE RUNOUT .0008 MAX

HOLE REAC. 002 T.I.R.

DIMENSIONS AFTER PLATING

STAT

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USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE —
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES	
CHANGE: ADD FINISH	MATERIAL: PHOSPHOR BRONZE
DATE	FINISH: SILVER PLATE .0006 MIN. THICK.
DFTSMN	
CHKD: D.L.C. 3-24-53 FJE 3-24-53	NET WT. GR. WT.
ENG.	

SPACER OK D.L.

DRAWN: GHS	DATE: 14AUG51	ENG. APP.	DATE
CHECKED	DATE	APPROVED	DATE

DWG. NO. A-125417 ISSUE XP

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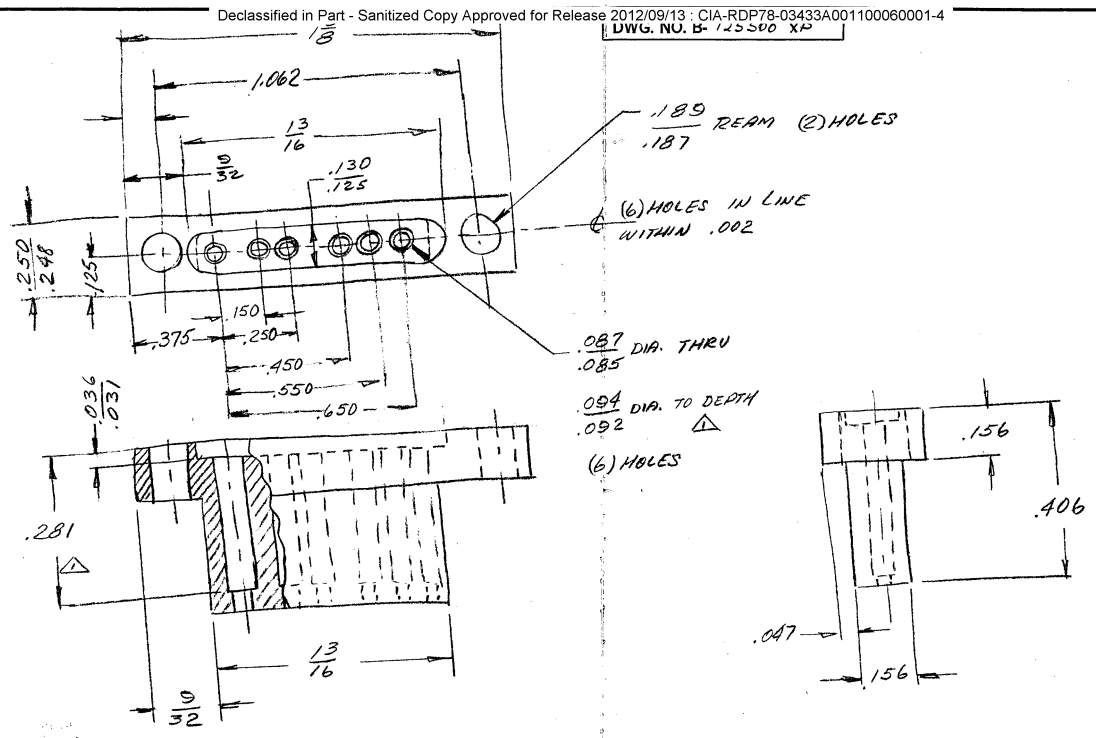
DWG. NO. B- 125500 XP



STAT

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(1) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	BLOCK
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	—	BRASS	
ISSUE		NET WT.	
CHANGE		FINISH	DRAWN CAB 25 SEP 51 / ENG. APP. / DATE
DATE		GROSS WT.	CHECKED / DATE / APPROVED / DATE
DFTSMN		—	DWG. No. B- 125500 ISSUE XP
CHKD			
ENG.			

"ALBANENE" NO. 1908M K&E CO., N.Y. U.S. PAT. OFF.

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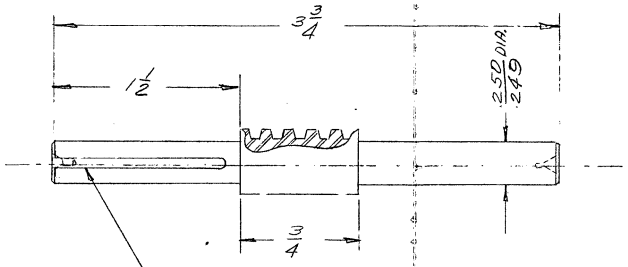
DWG. NO. B-125513 XP



HOB DATA

NORMAL PRESSURE ANGLE	20°
NO. OF THREADS	7
AXIAL PITCH	.050
OUTSIDE DIA.	.3300 +.0010 −.0000
ROOT DIA.	.2604 +.0010 −.0000
PITCH DIA.	.2802
LEAD ANGLE AT P.D.	21°
NO. OF GASHES	8

REF:
"SPECIFICATIONS FOR WORM & WORM GEAR RATIO"
J.H.B. DWG. # A125509

STAT

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USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED		
DEC. DIM. ±	FRAC. DIM. ±	ANG. DIM. ±

SCALE —

MATERIAL: 18-4-1 HIGH SPEED STEEL

NET WT.

FINISH: GRIND ALL OVER

GROSS WT.

HOB

ISSUE			
CHANGE			
DATE			
DFTSMN			
CHKD			
ENG.			

DRAWN WB 8 FEB 52 | ENG. APP. | DATE

CHECKED | DATE | APPROVED | DATE

DWG. No. B-125513 ISSUE XP

"ALBANENE" No. 1998 KEUFFEL & ESSER CO., N.Y. & SUBS. U.S.A. PAT. APP.

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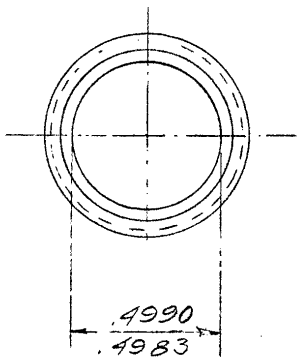
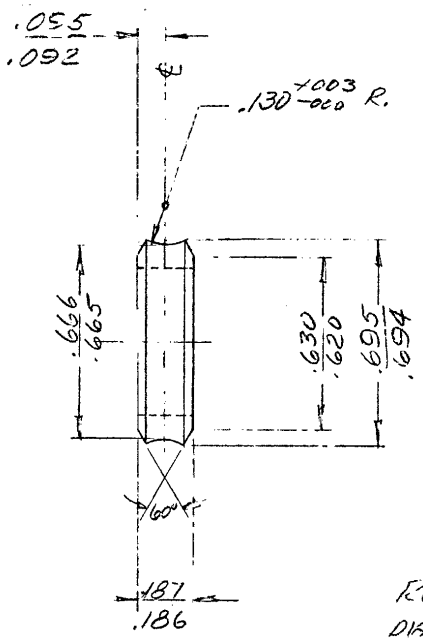
DWG. NO. A- 125507 ISSUE XP





STAT

RUNOUT OF O.D. & THREAT DIA. ($\frac{.666}{.665}$) WITH BORE SHALL NOT EXCEED .002 T.I.R.

RUNOUT OF FACES WITH BORE SHALL NOT EXCEED .0005 T.I.R.

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USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE TWICE	MATERIAL	BLANK, WORM GEAR
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± 2°	1ST. CONTRACT —	PHOSPHOR BRONZE	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		FINISH —	
CHANGE		DRAWN DK 26 NOV 51	ENG. APP. DATE
DATE		CHECKED DATE	APPROVED DATE
DFTSMN		NET WT	GR. WT
CHKD		DWG. NO. A- 125507	ISSUE XP
ENG.			

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DWG. NO. A- 125508 ISSUE XP

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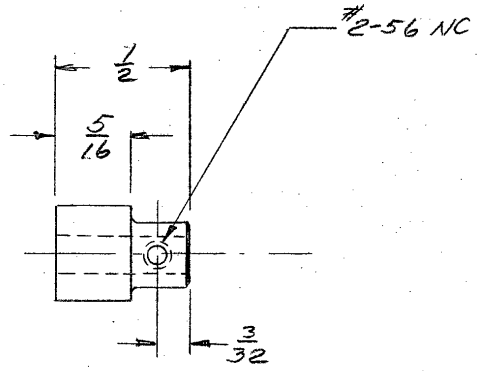

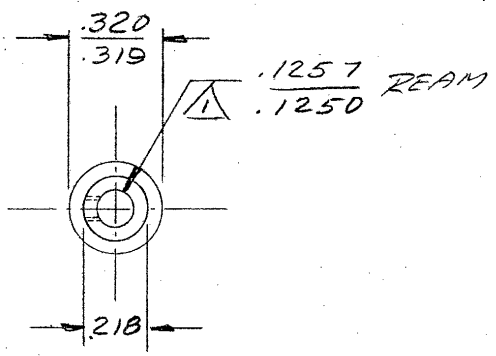

1 CONC. WITH O.D. WITHIN .001 T.I.R.

STAT

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USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE: TWICE
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES	
CHANGE	
DATE	
DFTSMN	
CHKD	
ENG.	

MATERIAL: 303 STAINLESS; O.H.T.S. (3) EACH

FINISH: —

NET WT. GR. WT.

BLANK, WORM

DRAWN 0103	DATE 28 NOV 51	ENG. APP.	DATE
CHECKED	DATE	APPROVED	DATE

DWG. NO. A- 125508 ISSUE XP

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DWG. NO. A-125509 ISSUE XP

WORM & GEAR

NORMAL PRESSURE ANGLE - 20°
ADDENDUM — .0149
WHOLE DEPTH — .0348
WORKING DEPTH — .0298
CLEARANCE — .0050
TOOTH THICKNESS — .0234
CENTER DISTANCE — .4634
TOLERANCE CLASS — COMMERCIAL 4

WORM

NO. OF THREADS — 1
LEAD ANGLE — 21°
AXIAL PITCH — .050
NORMAL PITCH — .0467
PITCH DIAMETER — .2902
OUTSIDE DIAMETER — .3200
LEAD — .350
LENGTH OF WORM — .312"
HAND — RIGHT
BLANK DWG. # A 125508

GEAR

NO. OF TEETH — 40
CIRCULAR PITCH — .050
NORMAL CIRC. PITCH — .0467
PITCH DIAMETER — .6366
OUTSIDE DIAMETER — .6997
THROAT DIAMETER — .6664
FACE WIDTH — .187
BLANK DWG. # A 125507

APPLICABLE STANDARDS

ASA B6.11-1951
ASA B6.9-1950

STAT

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USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	SPECIFICATIONS FOR WORM & WORM GEAR PAIR.
DEC. DIM. ± — FRAC. DIM. ± — ANG. DIM. ± —	1ST. CONTRACT	—	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE		FINISH	DRAWN 28 MAY 51 DATE / ENG. APP. DATE
DATE		—	CHECKED DATE / APPROVED DATE
DFTSMN			
CHKD			
ENG.		NET WT. / GR. WT.	DWG. No. A-125509 ISSUE XP

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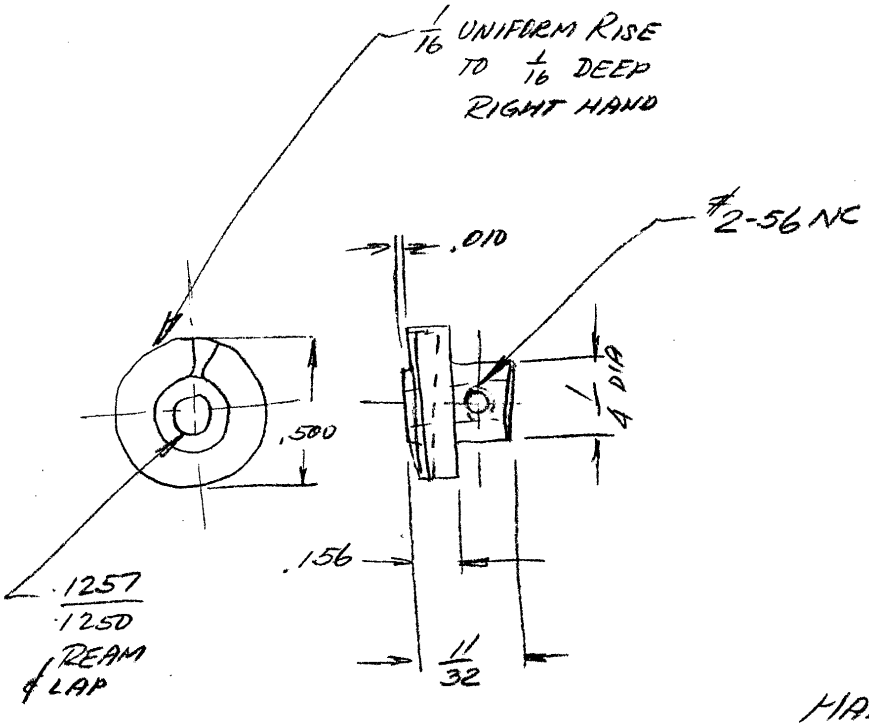
DWG. NO. A- 125510 ISSUE XP

(2)



HARDEN, DRAW & POLISH

STAT

This document is [illegible] filed. If [illegible] must be subjected to [illegible] systematic review.

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE —	MATERIAL	COUPLER
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	DRILL ROD	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		FINISH	
CHANGE		—	DRAWN C103 DATE 11 DEC 51 / ENG. APP. DATE
DATE			CHECKED DATE / APPROVED DATE
DFTSMN			
CHKD			
ENG.		NET WT. / GR. WT.	DWG. NO. A- 125510 ISSUE XP

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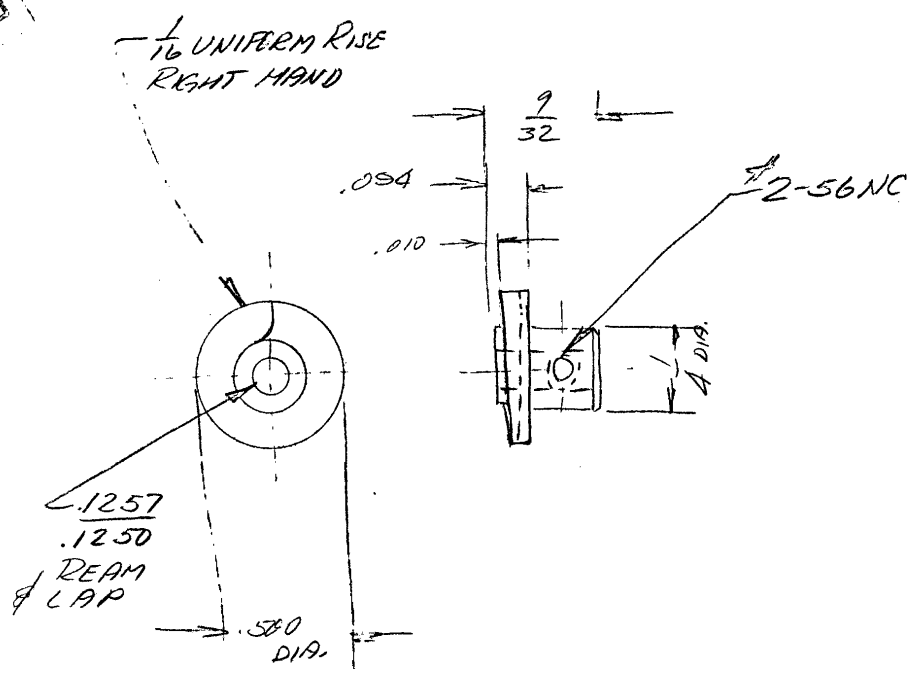
DWG. NO. A- 125511 ISSUE XP



STAT

HARDEN, DRAKE & WELSH

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USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	COUPLER
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	—	DRILL ROD	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES	1ST. CONTRACT		
CHANGE		FINISH	DRAWN DATE 5 DEC 51 / ENG. APP. DATE
DATE		—	CHECKED DATE / APPROVED DATE
DFTSMN			
CHKD			
ENG.		NET WT. / GR. WT.	DWG. NO. A- 125511 ISSUE XP

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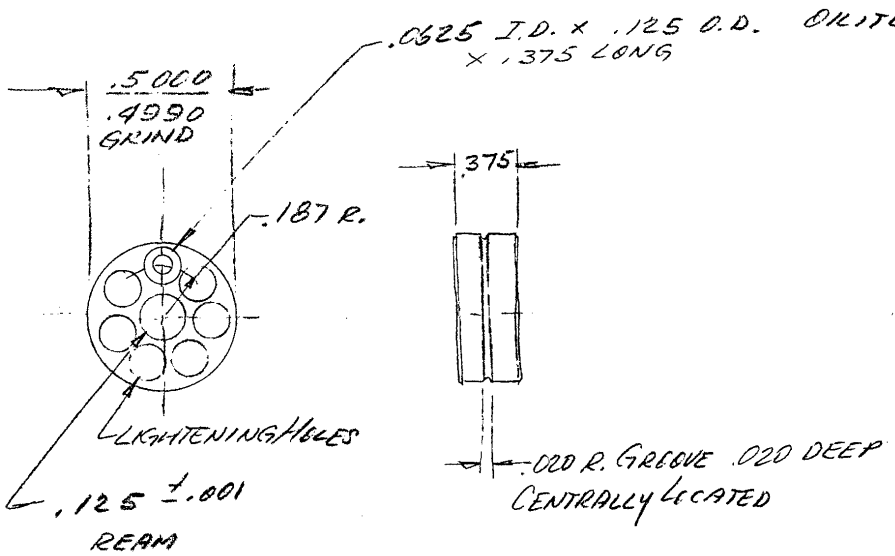
DWG. NO. A-125512 ISSUE XP



STAT

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USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE —	MATERIAL	JOURNAL
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	STAINLESS STEEL 303	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		FINISH —	
CHANGE			DRAWN CHS DATE 11 DEC. 51 ENG. APP. DATE
DATE			CHECKED DATE APPROVED DATE
DFTSMN			
CHKD			
ENG.		NET WT GR WT	DWG. NO. A-125512 ISSUE XP

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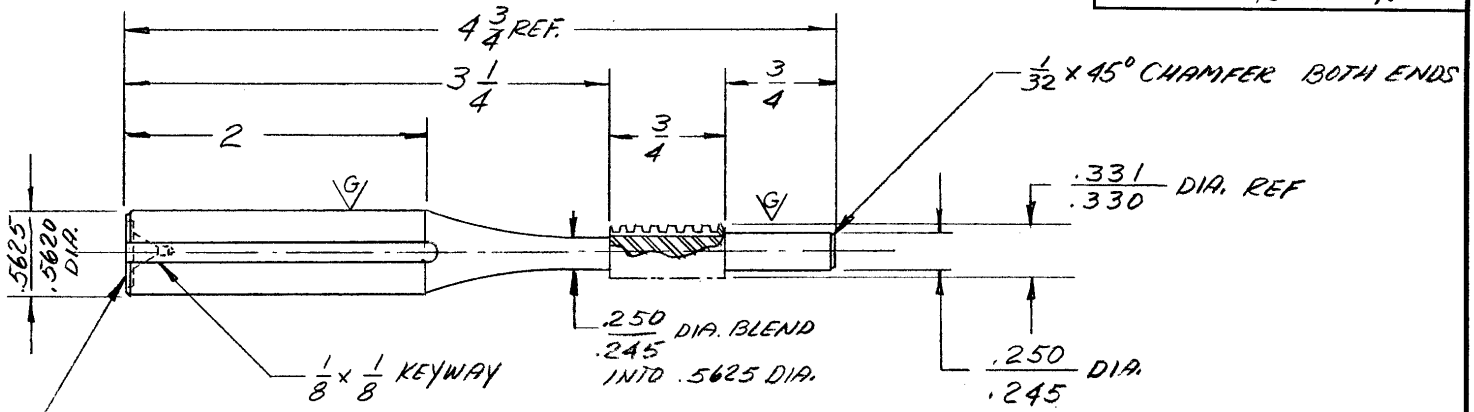
DWG. NO. A-125514 ISSUE XP



HOB DATA

NORMAL PRESSURE ANGLE	20°
NUMBER OF THREADS	7
AXIAL PITCH	.0500
LEAD	.3500
OUTSIDE DIAMETER	.330 +.001 −.000
ROOT DIAMETER	.2604 +.001 −.000
LEAD ANGLE	21°
NUMBER OF GASHES	4, 5 OR 6
LAND WIDTH (MIN)	.090
HAND OF THREAD	RIGHT
FORM RELIEVE THREAD GASH AS CLOSE TO NORMAL TO THD. PROFILE AS POSSIBLE.	

GRIND THREAD AND FLUTES

USED ON

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HOB

TOLERANCES UNLESS OTHERWISE DESIGNATED		SCALE FULL	MATERIAL
DEC. DIM. ± .005	FRAC. DIM. ± .015	ANG. DIM. ± —	1ST. CONTRACT —	18-4-1 H.S.S. H.T. ROCK. C 62-65
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			

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CHANGE			
DATE			
DFTSMN			
CHKD			
ENG.			

FINISH —

NET WT. GR. WT

DRAWN AB	DATE 12 FEB 52	ENG. APP.	DATE
CHECKED	DATE	APPROVED	DATE

DWG. NO. A-125514 ISSUE XP

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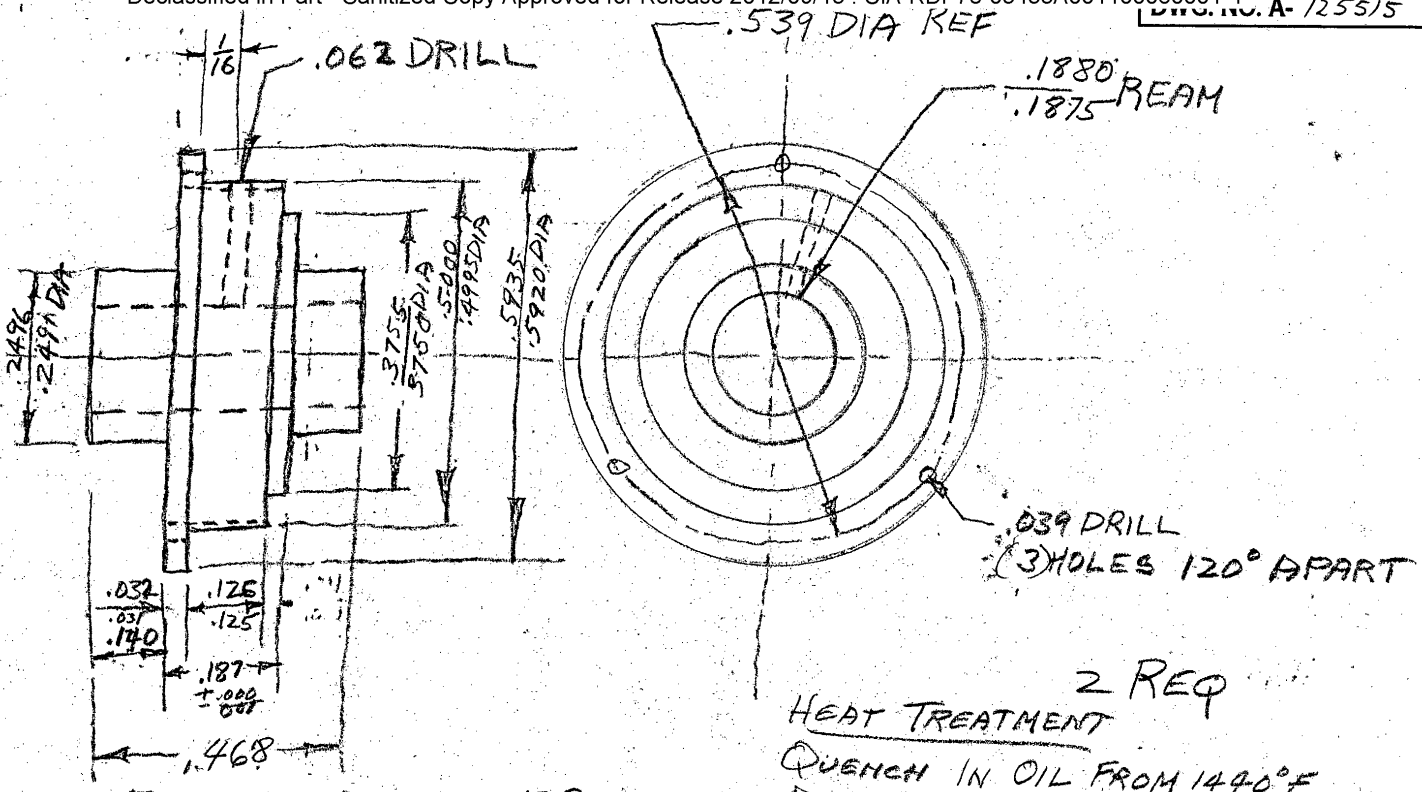
DWG. NO. A- 125515 ISSUE XP



2 REQ

RUNOUT OF FACES WITH BORE NOT TO EXCEED .0005 MAX
ALL DIAMETERS CONC WITHIN .0002 T.I.R.

HEAT TREATMENT
QUENCH IN OIL FROM 1440°F
DRAW 1 HOUR AT 375°F
ROCK C60-62

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±	1ST. CONTRACT	CARPENTER #11 SPECIAL OR EQUAL-	HUB, GEAR
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE: This document is part of the integrated file, if separated from the file it could be subjected to individual systematic review.		FINISH	
DATE			DRAWN MR DATE 3/5/57 ENG. APP. DATE
DFTSMN			CHECKED DATE APPROVED DATE
CHKD			
ENG.		NET WT. GR. WT.	DWG. NO. A-125515 ISSUE XP

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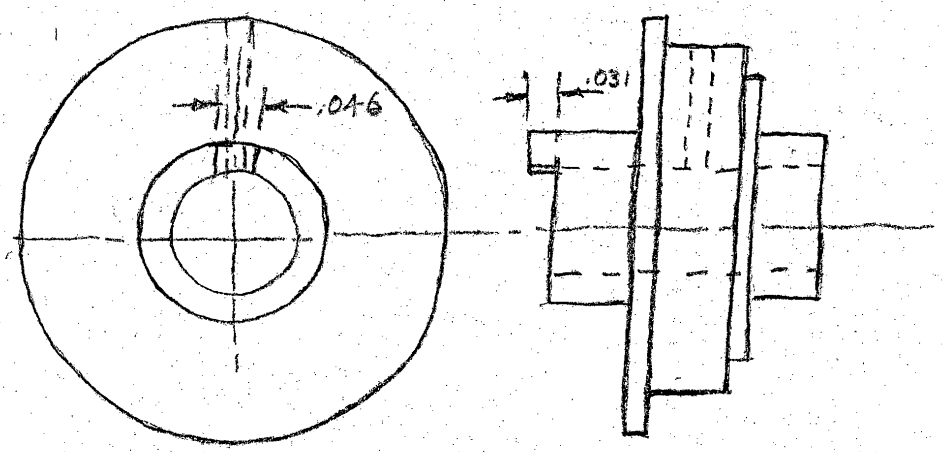
ALL DIAMETERS CONC. WITHIN .0002 T.I.R.

DWG. NO. A- 125516 ISSUE XP



1 REQ

HEAT TREATMENT
QUENCH IN OIL FROM 1440°F
DRAW 1 HOUR AT 375°F
ROCK. C60-62

NOTE:
ALL OTHER DIMENSIONS
SAME AS DRAWING # A 125515

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES

SCALE
1ST. CONTRACT

MATERIAL
OHTS

HUB, GEAR

STAT

CHANGE
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FINISH

DRAWN MR 3/5/52	DATE	ENG. APP.	DATE
CHECKED	DATE	APPROVED	DATE
DATE			
DFTSMN			
CHKD			
ENG.			

NET WT GR WT

DWG. NO. A- 125516 ISSUE XP

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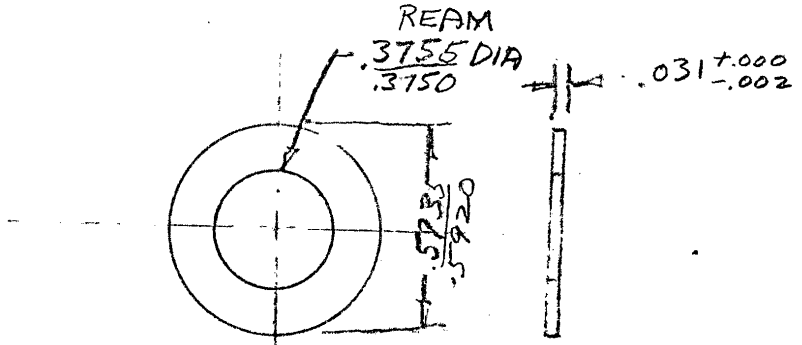

(3) REQ

STAT

RUNOUT OF FACES SHALL NOT EXCEED .0005 MAX
DIAMETERS CONC. WITHIN .0002 T.I.R.

This document is part of an intelligence file and is subject to individual systematic review.

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	FLANGE
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	CRS	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		FINISH	

CHANGE		DRAWN MJR DATE 3/5/62	ENG. APP. DATE
DATE		CHECKED DATE	APPROVED DATE
DFTSMN			
CHKD			
ENG.		NET WT. GR. WT.	DWG. NO. A-125517 ISSUE XP

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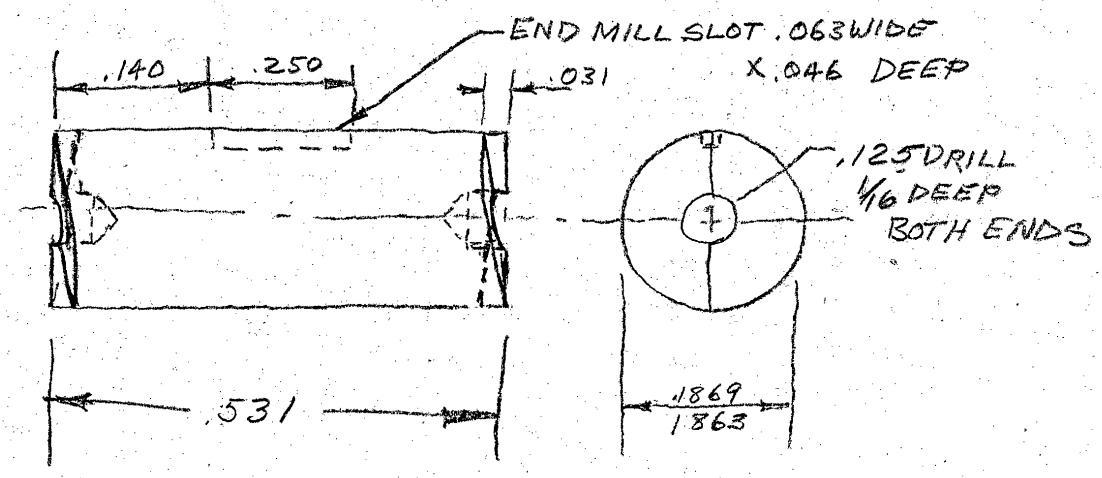
DWG. NO. A- 125518 ISSUE XP

NOTE: ANGULAR RELATIONSHIP BETWEEN CLUTCH TEETH OF OPPOSITE ENDS MAY BE RANDOM



HARDEN DRAW + POLISH

(2) REQ

STAT

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED		SCALE —	MATERIAL
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —		1ST. CONTRACT	DRILL ROD
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE	This document is part of an integrated system & separated from the file it may be subjected to individual systematic review.		FINISH
DATE			POLISH
DFTSMN			
CHKD			
ENG.		NET WT	GR. WT

DRIVER (CLUTCH)

DRAWN ME	DATE 3/6/52	ENG. APP.	DATE
CHECKED [illegible]	DATE 3/17/52	APPROVED	DATE

DWG. NO. A- 125518 ISSUE XP

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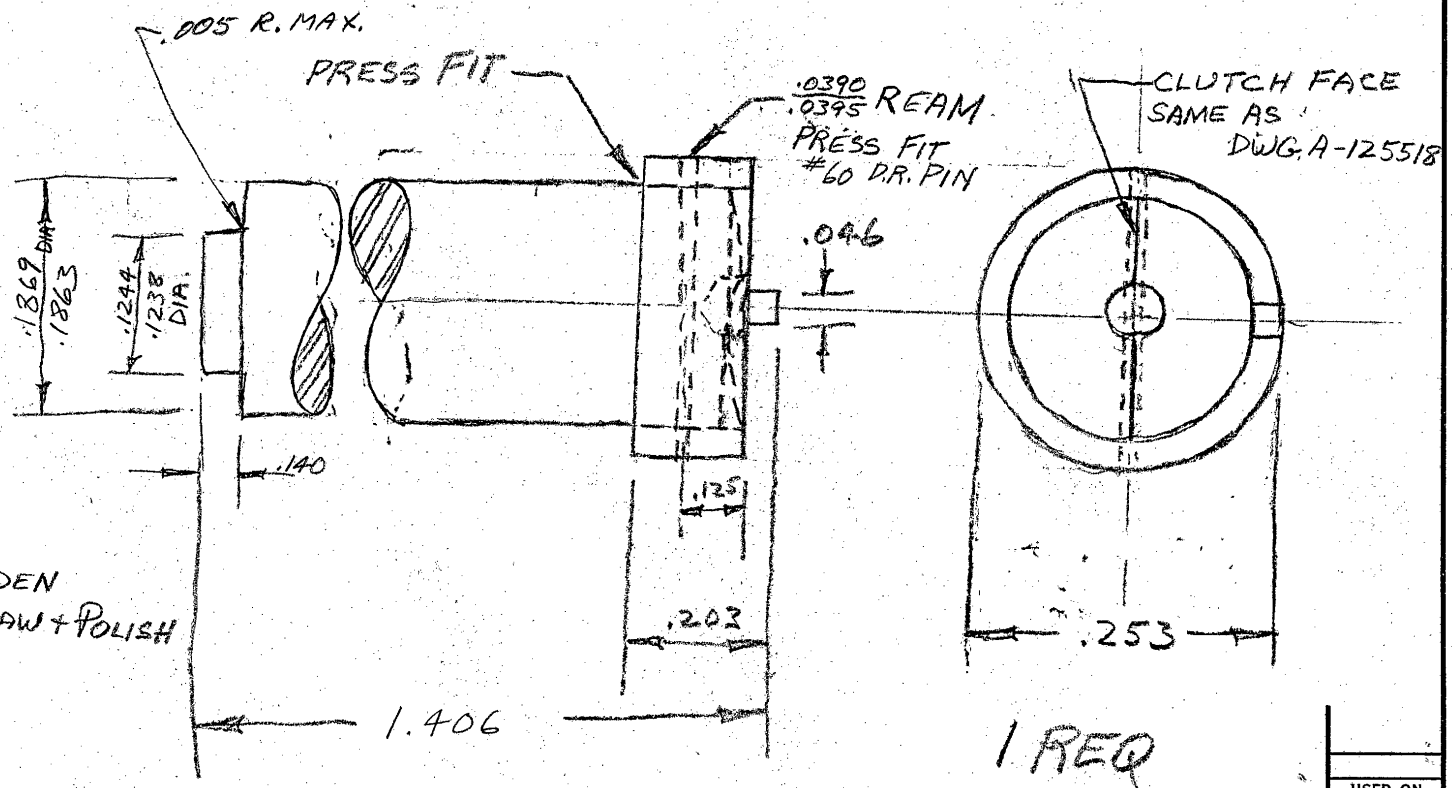
ALL DIAMETERS CONC WITHIN .0005 T.I.R.

DWG. NO. A-125519 ISSUE XP



HARDEN
DRAW + POLISH

1 REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±	1ST. CONTRACT	DRILL ROD	SHAFT
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		FINISH	

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CHANGE			
DATE		DRAWN MR 3/15/52	ENG. APP. DATE
DFTSMN		CHECKED DR3 3/20/52	APPROVED DATE
CHKD			
ENG.		NET WT.	GR. WT.

DWG NO A-125519 ISSUE XP

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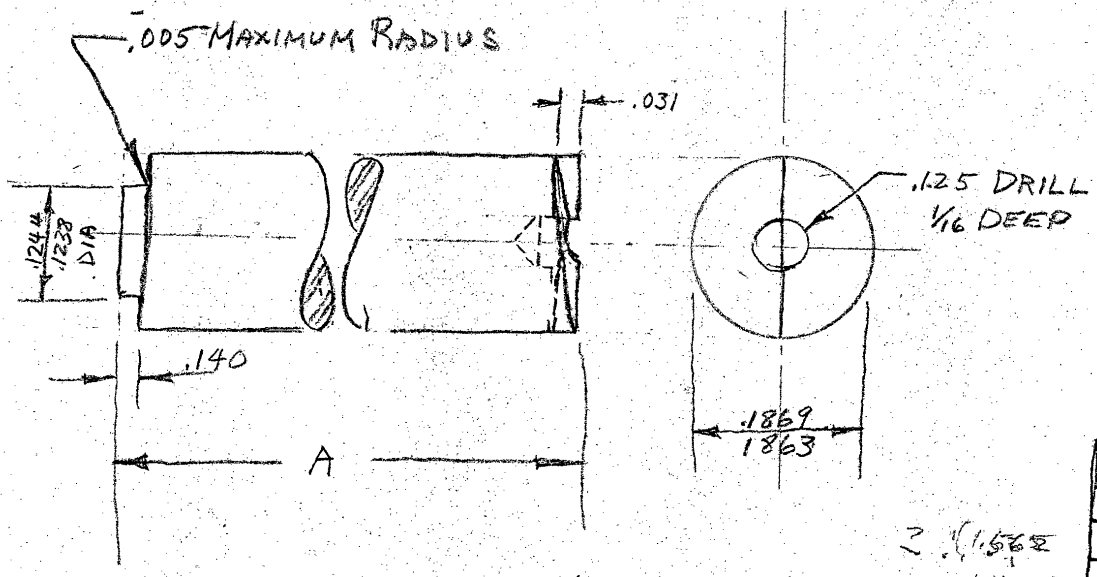
DWG. NO. A-125520 ISSUE XP



REQ	A
1	.937
1	1.687
1	1.812

2 .(1.562
1.625

HARDEN, DRAW + POLISH

EXTERNAL DIAMETERS CONC WITHIN .0005 T.I.R.

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES

SCALE
1ST. CONTRACT

MATERIAL
DRILL ROD

FINISH

STAT
SHAFT

CHANGE
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DATE	
DFTSMN	
CHKD	
ENG.	

DRAWN ML 3/16/52
CHECKED CMB 3/20/52
APPROVED DATE

NET WT GR WT

DWG. NO A- 125520 ISSUE XP

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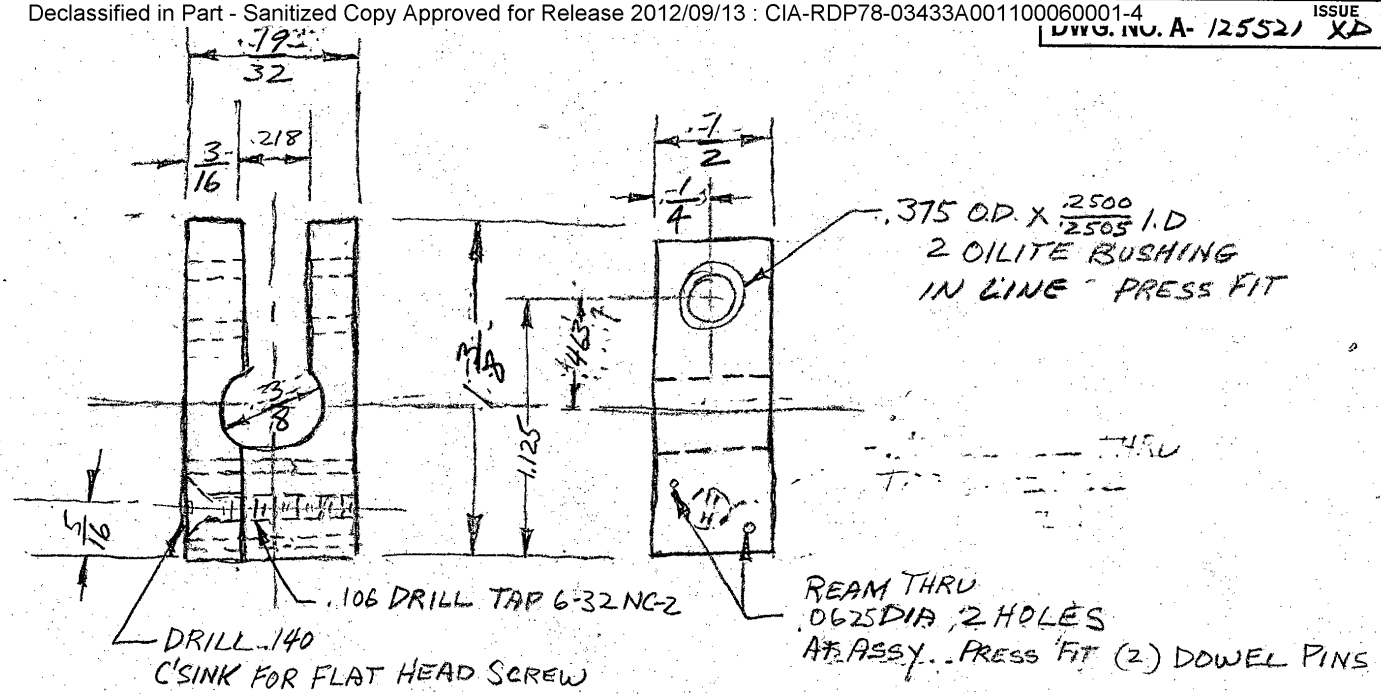
DWG. NO. A- 12552 ISSUE XD



2 REQ STAT

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	MOUNT, BEARING
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±	1ST. CONTRACT	24ST4 ALUMINUM	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		FINISH	

CHANGE

Drawings of assemblies are to be integrated with this drawing. If separated from the assembly, it must be subjected to individual systematic review.

DATE		DRAWN MR	DATE 3/6/52	ENG. APP.	DATE
DFTSMN		CHECKED WB	DATE 3/20/52	APPROVED	DATE
CHKD					
ENG.		NET WT.	GR. WT.	DWG. NO. A- 12552	ISSUE XD

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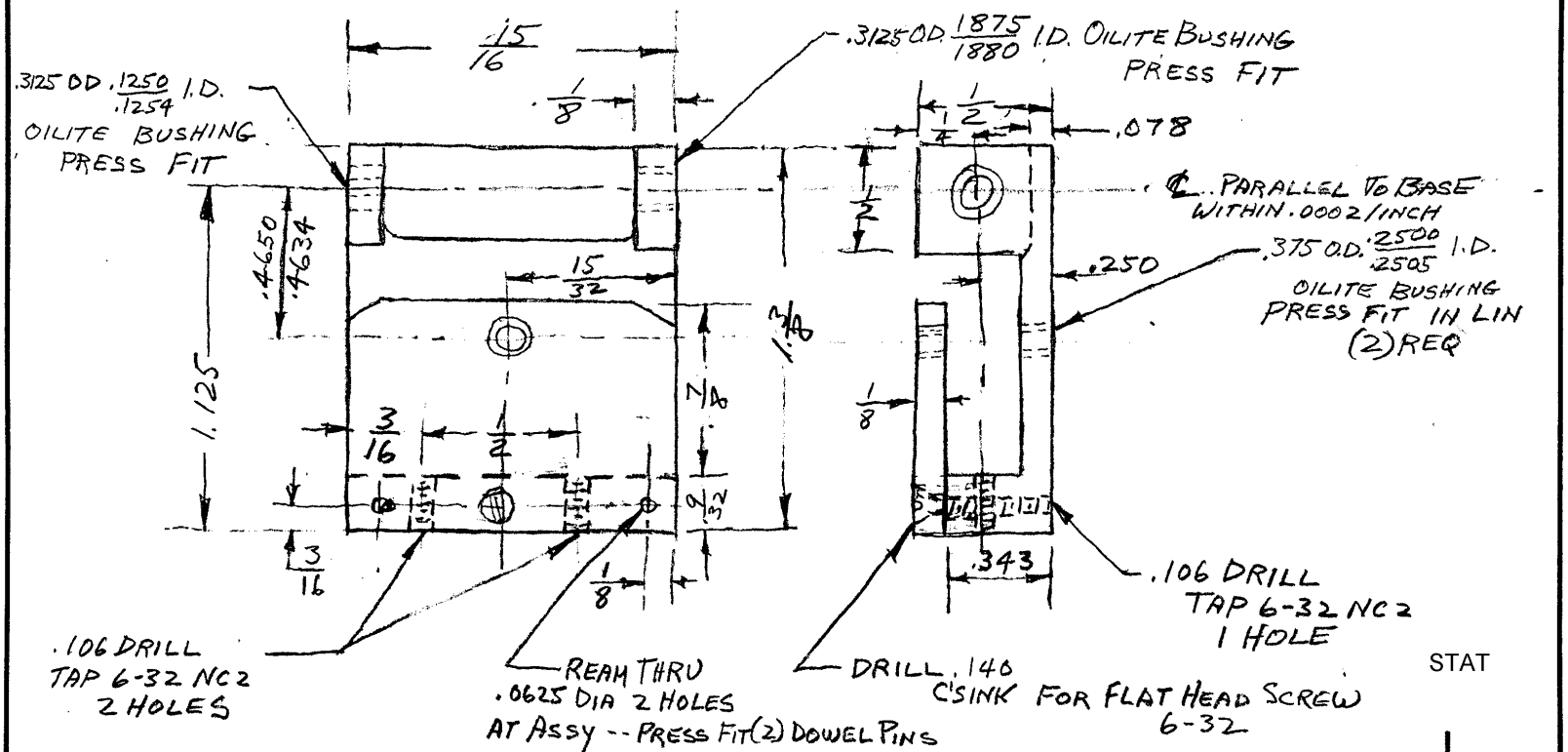
DWG. NO. A-125522-XP ISSUE



STAT

1 REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED		SCALE —	MATERIAL 24ST4 ALUMINUM
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±		1ST. CONTRACT	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE	This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.		FINISH
DATE			
DFTSMN			
CHKD			
ENG.			

MOUNT, BEARING

DRAWN MK	DATE 3/6/52	ENG. APP.	DATE
CHECKED	DATE	APPROVED	DATE

NET WT GR WT

DWG. NO A-125522-XP ISSUE

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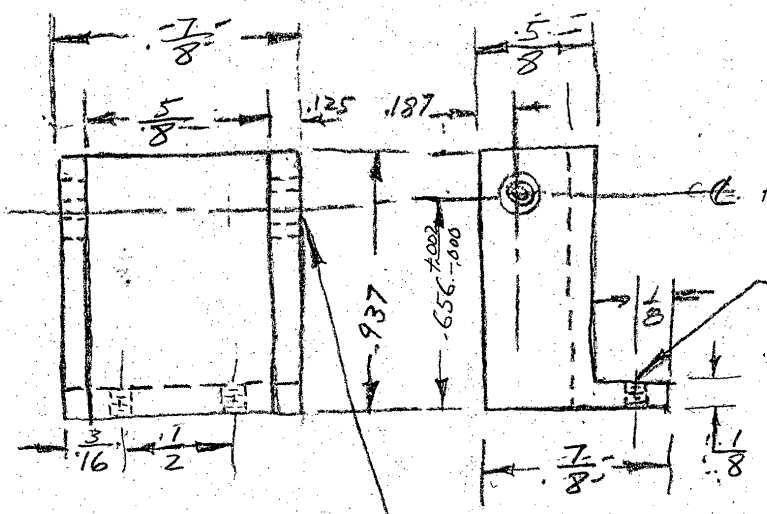
DWG. NO. A- 125523 ISSUE XP



.3125 O.D. X .1250/.1254 I.D. OILITE BUSHING - PRESS FIT

℄ PARALLEL WITHIN .0002/INCH TO BASE

DRILL .106
6-32 NC-2 TAP
2 HOLES

.31250 O.D. X .1875/.1880 I.D. OILITE BUSHING IN LINE - PRESS FIT

STAT

(2) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	MOUNT, BEARING
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±	1ST. CONTRACT	24ST4 ALUMINUM	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		FINISH	

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CHANGE

	DRAWN	DATE	ENG. APP.	DATE
DATE				
DFTSMN	CHECKED WLB	DATE 3/28/52	APPROVED	DATE
CHKD				
ENG.	NET WT.	GR. WT.	DWG. NO. A- 125523	ISSUE XP

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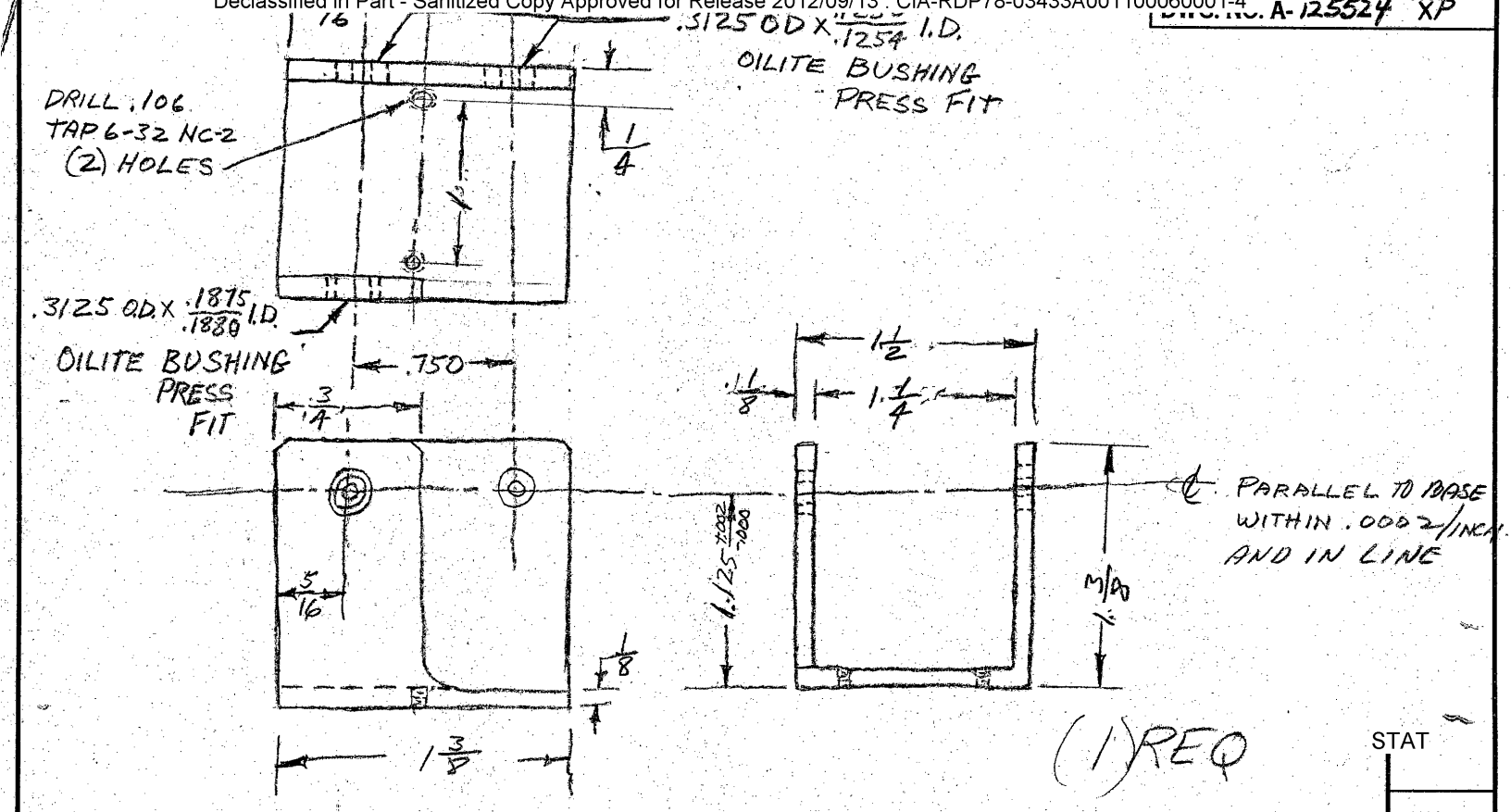
DWG. NO. A-125524 ISSUE XP



STAT

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	MOUNT, BEARING
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±	1ST. CONTRACT	ALUMINUM CHANNEL 535-75	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		FINISH	

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CHANGE		DRAWN	DATE	ENG. APP.	DATE
DATE			3/26/52		
DFTSMN		CHECKED	DATE	APPROVED	DATE
CHKD			3/28/52		
ENG.		NET WT	GR. WT	DWG. NO. A-125524	ISSUE XP

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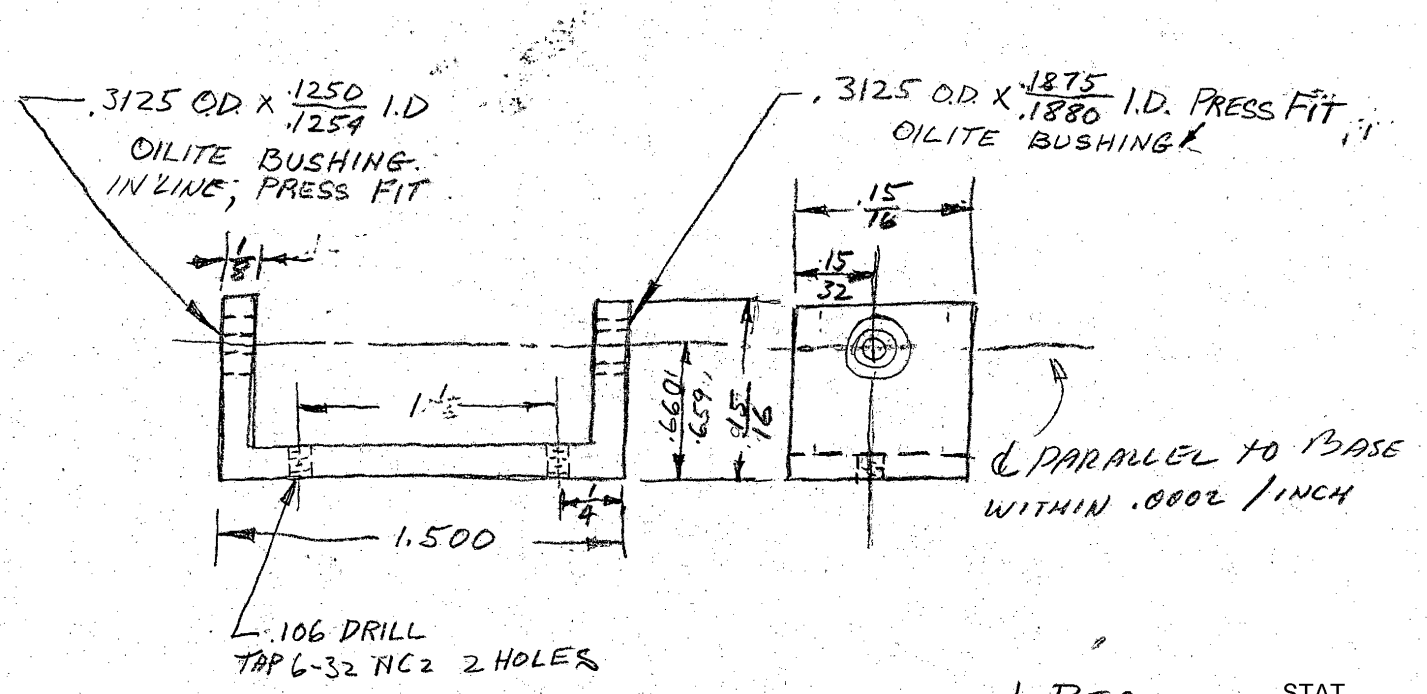
DWG. NO. A- 125525 ISSUE XP



1 REQ

STAT

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	MOUNT, BEARING
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±	1ST. CONTRACT	ALUMINUM CHANNEL 53S-T5	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
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DATE			DRAWN NOK DATE 3/6/62 ENG. APP. DATE
DFTSMN			CHECKED WB DATE 3/20/62 APPROVED DATE
CHKD			
ENG.		NET WT GR WT	DWG. NO A- 125525 ISSUE XP

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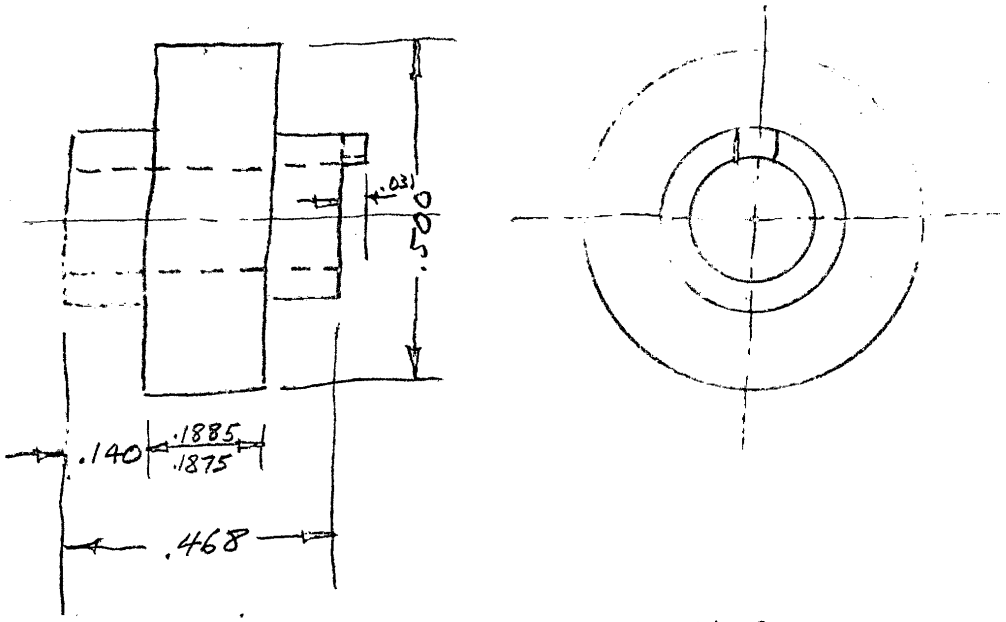
DWG. NO. A- 125526-XP ISSUE



STAT

ALL DIAMETERS CONC WITHIN .0002 T.I.R

NOTE
ALL OTHER DIMENSIONS SAME AS DWG # A125516

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED		SCALE	MATERIAL
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±		1ST. CONTRACT	OHTS
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE	This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.		FINISH
DATE			
DFTSMN			
CHKD			
ENG.		NET WT	GR. WT

HUB, GEAR

DRAWN MR	DATE 3/5/52	ENG. APP.	DATE
CHECKED	DATE	APPROVED	DATE

DWG. NO. A- 125526 XP ISSUE

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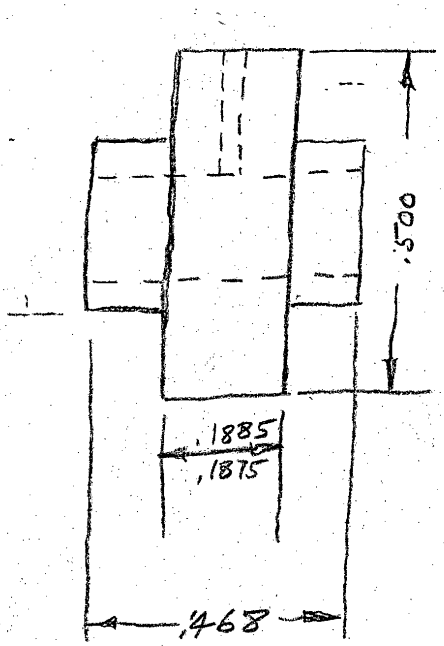
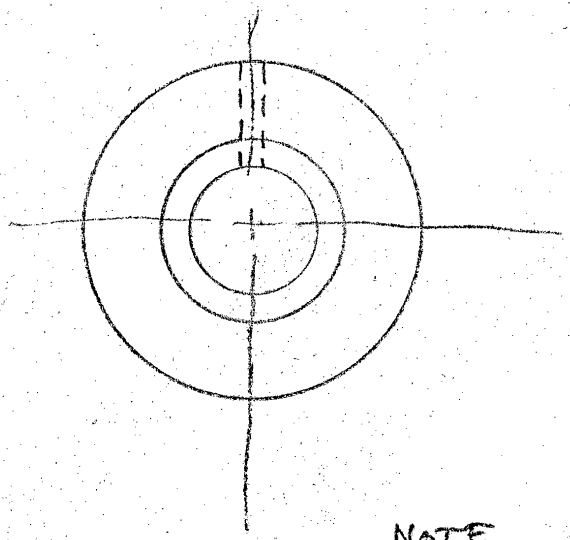
DWG. NO. A- 125527 XP ISSUE





STAT

NOTE
ALL OTHER DIMENSIONS & HEAT TREATMENT SAME AS DWG #A-125515

ALL DIAMETERS CONC WITHIN .0002 T.I.R.

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED		SCALE	MATERIAL
DEC. DIM. ±	FRAC. DIM. ±	ANG. DIM. ±	1ST. CONTRACT	OHTS
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE	This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.		FINISH
DATE			
DFTSMN			
CHKD			
ENG.		NET WT.	GR. WT.

HUB, GEAR

DRAWN 3/6/52	DATE	ENG. APP.	DATE
CHECKED	DATE	APPROVED	DATE

DWG. NO. A-125527 XP ISSUE

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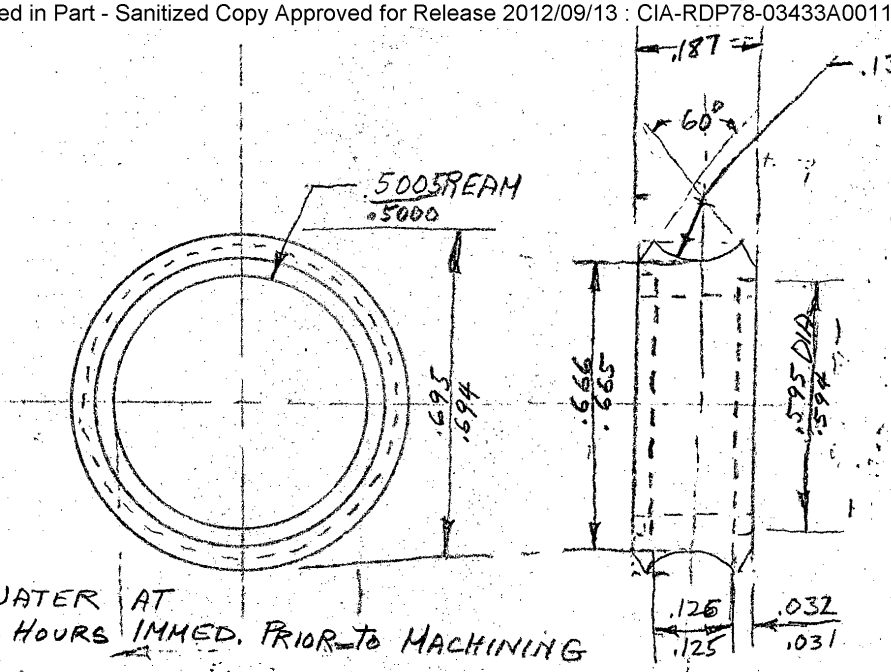
DWG. NO. A-125528 ISSUE XP



IMMERCE IN WATER AT 200°F. FOR 6 HOURS IMMED. PRIOR TO MACHINING

RUNOUT OF O.D. & THROAT DIA (.666 / .665) WITH BORE SHALL NOT EXCEED .002 T.I.R

RUNOUT OF FACES WITH BORE SHALL NOT EXCEED .0005 MAX

ALL DIAMETERS CONC. WITHIN .0002 T.I.R

3 REQ

STAT

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	BLANK, WORM GEAR
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±	1ST. CONTRACT	NYLON	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
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DATE			CHECKED DATE APPROVED DATE
DFTSMN			
CHKD			
ENG.		NET WT GD WT	DWG NO A-125528 ISSUE XP

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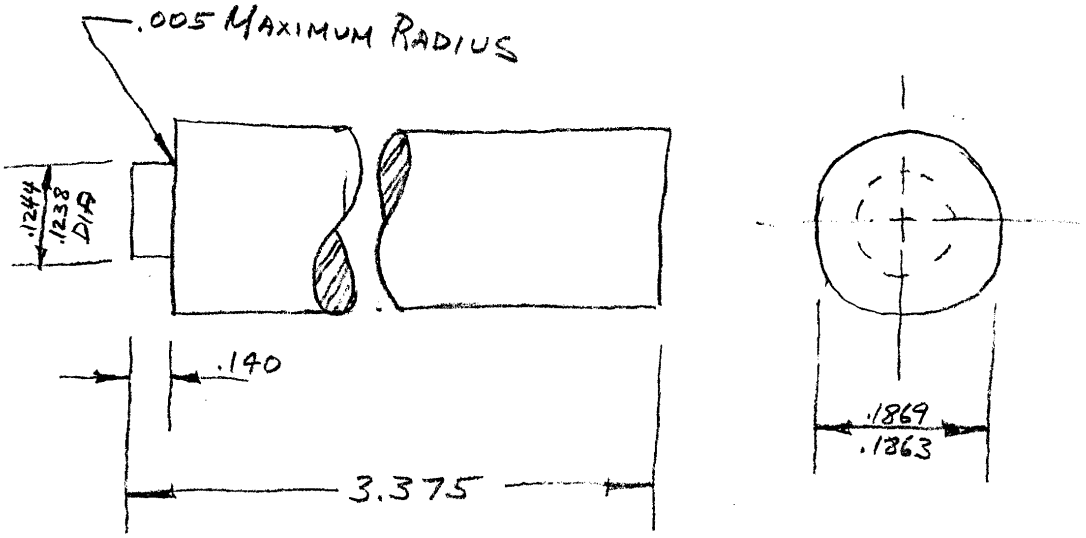
DWG. NO. A- 125529 ISSUE XP



STAT

ALL DIAMETERS CONC WITHIN .0005 T.I.R

1 REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	SHAFT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±	1ST. CONTRACT	C.R.S.	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
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DATE			CHECKED DATE APPROVED DATE
DFTSMN			
CHKD			
ENG.		NET WT. GR. WT.	DWG. NO. A-125529 ISSUE XP

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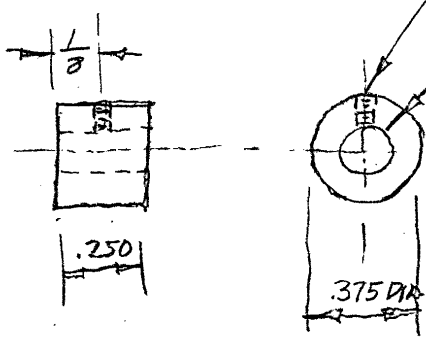
DWG. NO. A-125530 ISSUE XP



FACE RUNOUT WITH HOLE .0005 MAX.

STAT

(3) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	COLLAR, THRUST
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	CRS	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
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DATE			DRAWN DATE / ENG. APP. DATE
DFTSMN			CHECKED DATE 3/1/54 / APPROVED DATE
CHKD			
ENG.		NET WT. / GR. WT	DWG. NO. A-125530 ISSUE XP

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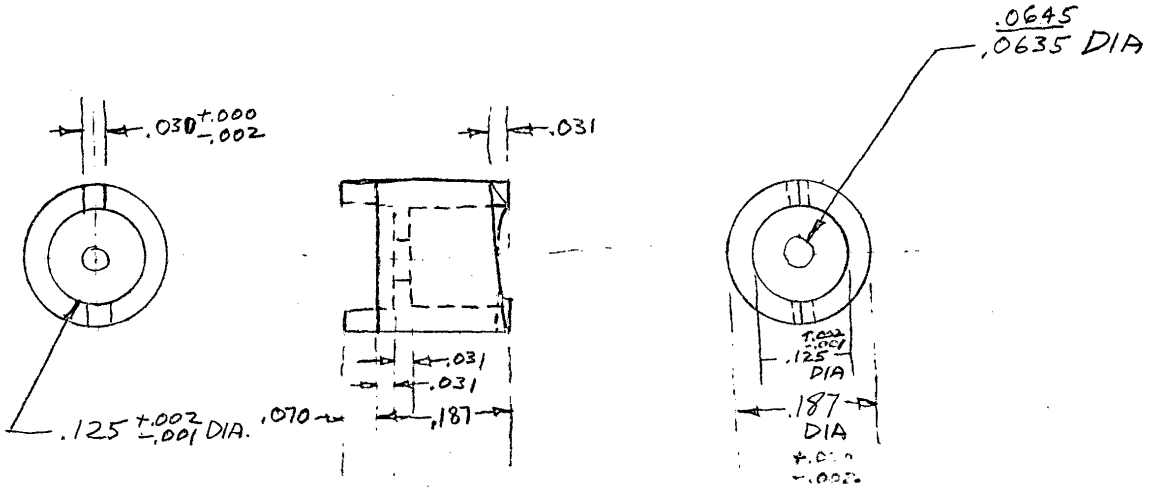
DWG. NO. A-125531 ISSUE XP



HARDEN + DRAW

STAT

(2) REQ

ALL DIAMETERS CONC WITHIN .0005 T.I.R

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± COMMERCIAL TOLERANCES APPLY TO STOCK SIZES	SCALE 1ST. CONTRACT	MATERIAL DRILL ROD	CLUTCH FACE
CHANGE This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.		FINISH	DRAWN MR DATE 3/27/57 ENG. APP. DATE CHECKED DATE APPROVED DATE
DATE DFTSMN CHKD ENG.		NET WT. GR. WT	DWG. NO. A-125531 ISSUE XP

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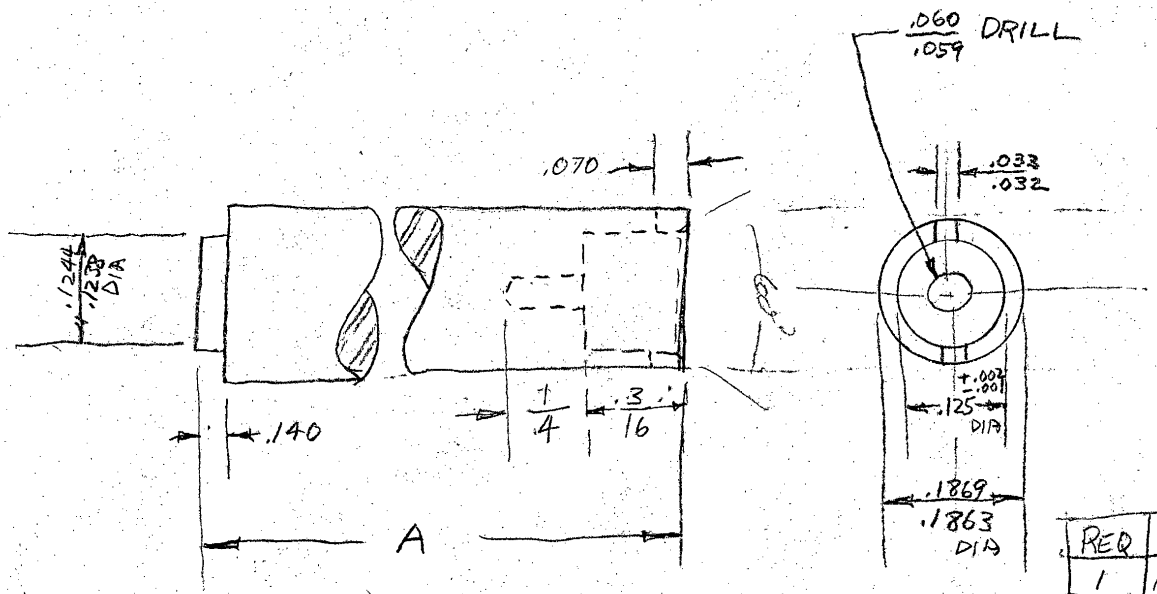
DWG. NO. A-125532 ISSUE XP



REQ	A
1	1.625
1	1.562

STAT

ALL DIAMETERS CONC WITHIN .0005 T.I.R.

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES

SCALE
1ST. CONTRACT

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CHANGE
DATE
DFTSMN
CHKD
ENG.

MATERIAL
DRILL ROD

FINISH

NET WT GR WT

SHAFT - S[illegible] 1

DRAWN MK DATE 3/28/52 ENG. APP. DATE
CHECKED DATE APPROVED DATE

DWG. NO. A-125532 ISSUE XP

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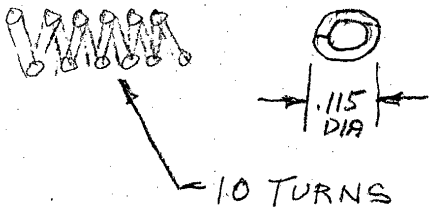
DWG. NO. A- 125533 ISSUE XP



(2) REQ

STAT

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	SPRING,
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±	1ST. CONTRACT	.010 DIA PIANO WIRE	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE — This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.		FINISH	DR DATE 3/28/5 ENG. APP. DAT STAT
DATE			CHECKED DATE APPROVED DATE
DFTSMN			
CHKD			
ENG.		NET WT GR WT	DWG. NO. A-125533 ISSUE XP

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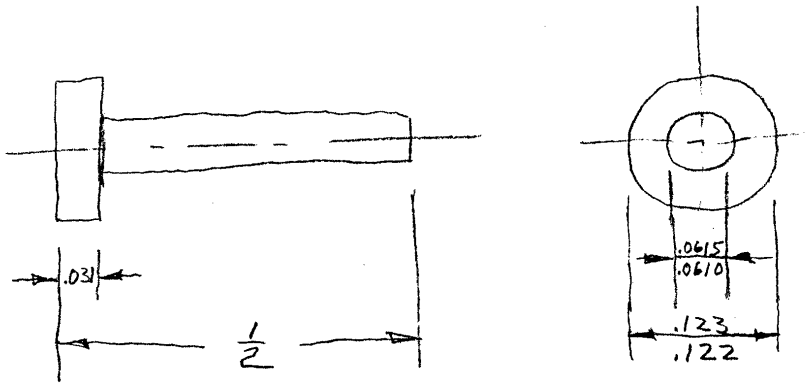
DWG. NO. A-125534 ISSUE XP



(2) REQ

ALL DIAMETERS CONC WITHIN .0005 T.I.R.

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±	1ST. CONTRACT	DRILL ROD	PIN
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE: This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.		FINISH	
DATE			DRAWN 3/19/52 DATE ENG. APP. DATE
DFTSMN			CHECKED DATE APPROVED DATE
CHKD			
ENG.		NET WT. GR. WT.	DWG. NO. A-125534 ISSUE XP

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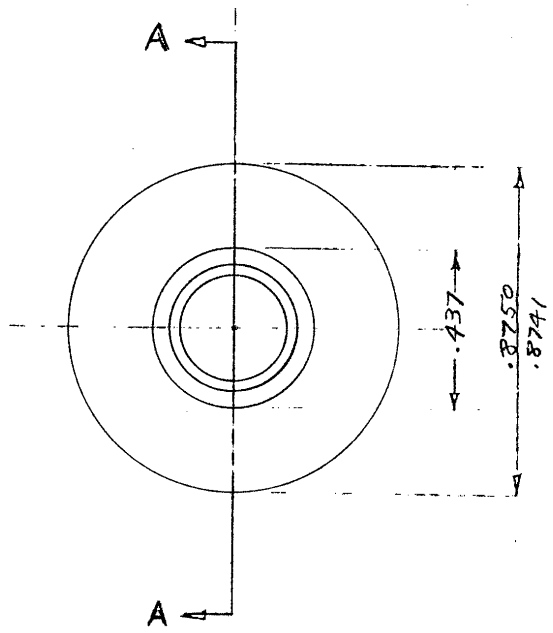
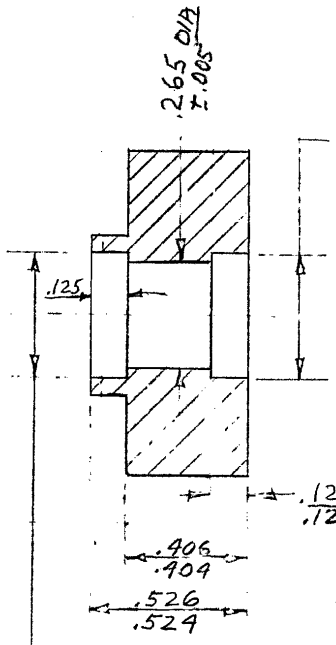
DWG. NO. A-125536 ISSUE XP





.375 O.D. X .1880/.1875 I.D. OILITE BUSHING PRESS FIT (1) REQ

SECTION AA

.375 O.D. X .2505/.2500 I.D. OILITE BUSHING - PRESS FIT (1) REQ

FACE RUNOUT WITH HOLES .0005 MAX

ALL DIAMETERS CONC. WITHIN .0002 T.I.R

(1) REQ

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE —	MATERIAL ALUM 24S T4	SPACER
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT		USED ON STAT
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
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DATE			DATE 4/4/52 ENG. APP. DATE STAT
DFTSMN			CHECKED DATE APPROVED DATE
CHKD			
ENG.		NET WT. GR. WT.	DWG. NO. A-125536 ISSUE XP

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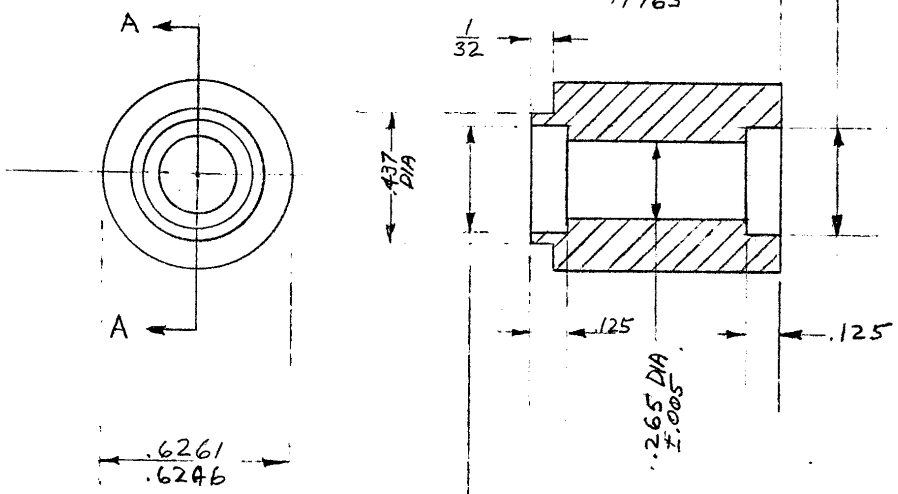
DWG. NO. A-125537 ISSUE XP



.375 O.D. X .1880/.1875 I.D. OILITE BUSHING
PRESS FIT (1) REQ

.375 O.D. X .2505/.2500 I.D. OILITE BUSHING - PRESS FIT
(1) REQ

FACE RUNOUT WITH HOLES .0005 MAX
DIAMETERS CONC WITHIN .0002 T.I.R.

(1) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE 2:1	MATERIAL	STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	ALUM 245-T4	SPACER
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE: This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.		FINISH	
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DFTSMN			CHECKED DATE APPROVED DATE
CHKD			
ENG.		NET WT GR WT	DWG. NO. A-125537 ISSUE XP

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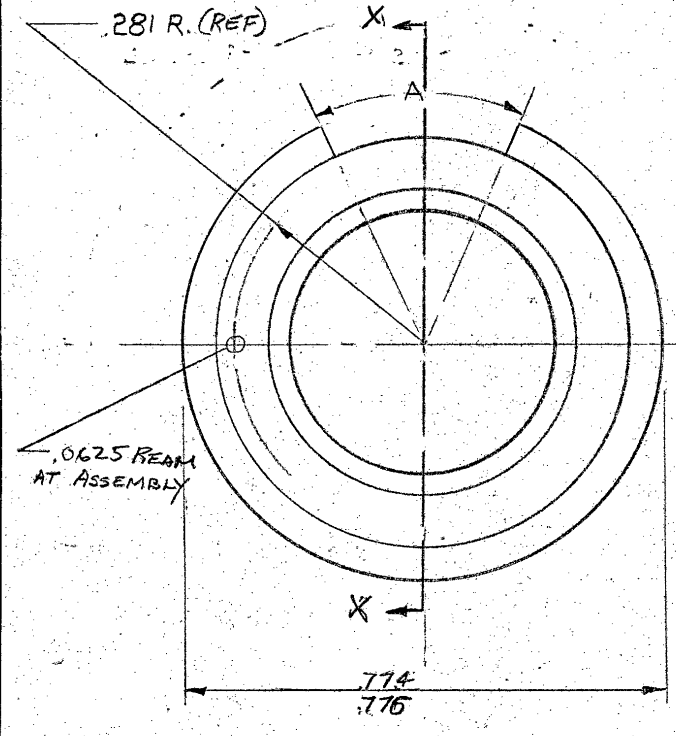
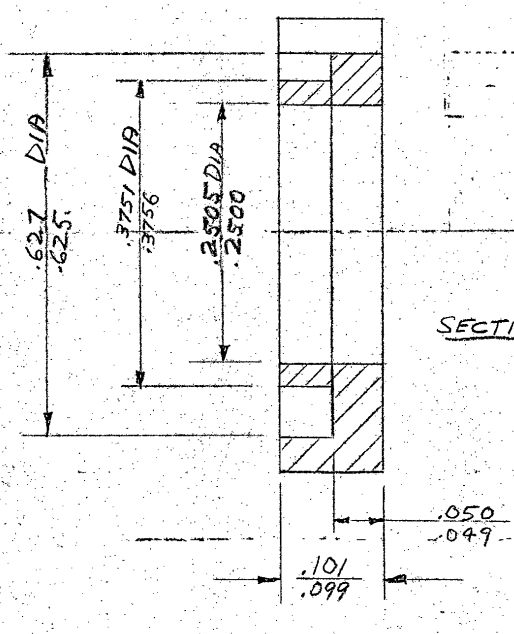
DWG. NO. A- 125538 ISSUE XP

DIVIDING HEAD INSTRUCTIONS

5 REQ - DIMENSION A:
5 TURNS + 15 HOLES ON 41 CIRCLE

1 REQ - DIMENSION A:
7 TURNS + 23 HOLES ON 42 CIRCLE





SECTION XX

ALL DIAMETERS CONC. WITHIN .0005 T.I.R
FACE RUNOUT .0005 MAX

(1) EACH REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±	1ST. CONTRACT	NYLON
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		

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DATE	
DFTSMN	
CHKD	
ENG.	

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NET WT. GR. WT.

INSULATOR STAT

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DK	4/14/52		
CHECKED	DATE	APPROVED	DATE

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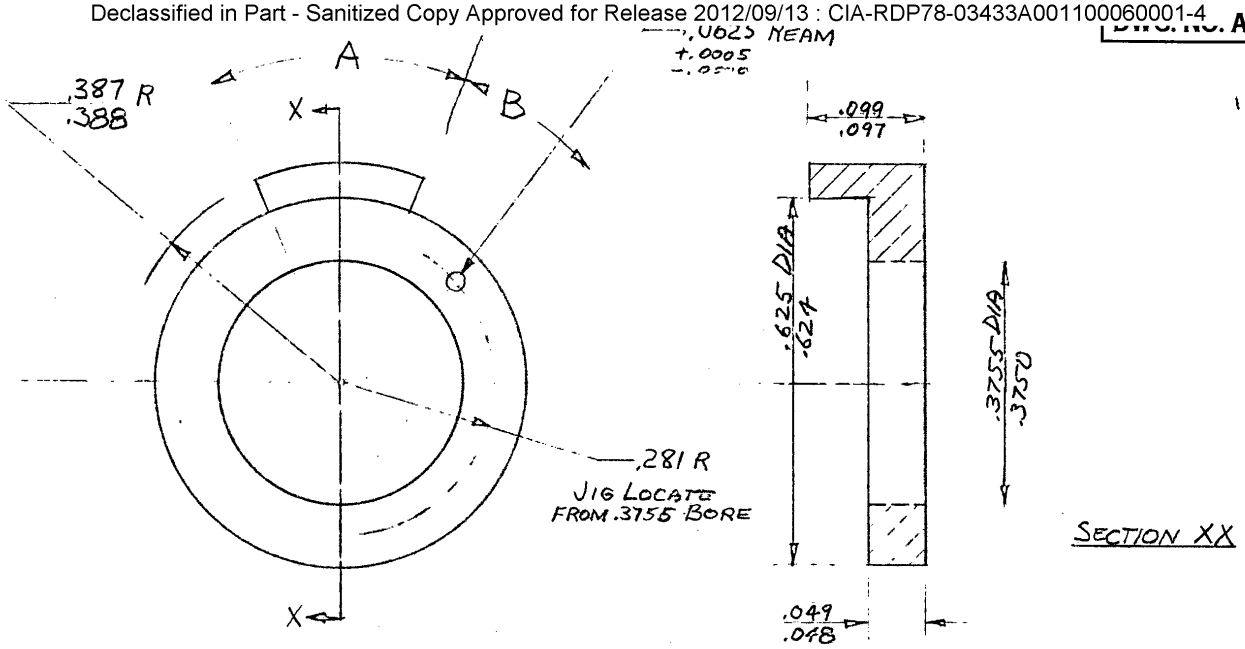
DWG. NO. A-125539 ISSUE XP



(1) EACH REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	STAT
DEC. DIM. ± FRAC. DIM. ± ANG. DIM. ±	1ST. CONTRACT	PHOSPHOR BRONZE	CAM
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
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DATE			DRAWN DATE 4/10/57 ENG. APP. DATE
DFTSMN			CHECKED DATE APPROVED DATE
CHKD			
ENG.		NET WT. GR. WT.	DWG. NO. A-125539 ISSUE XP

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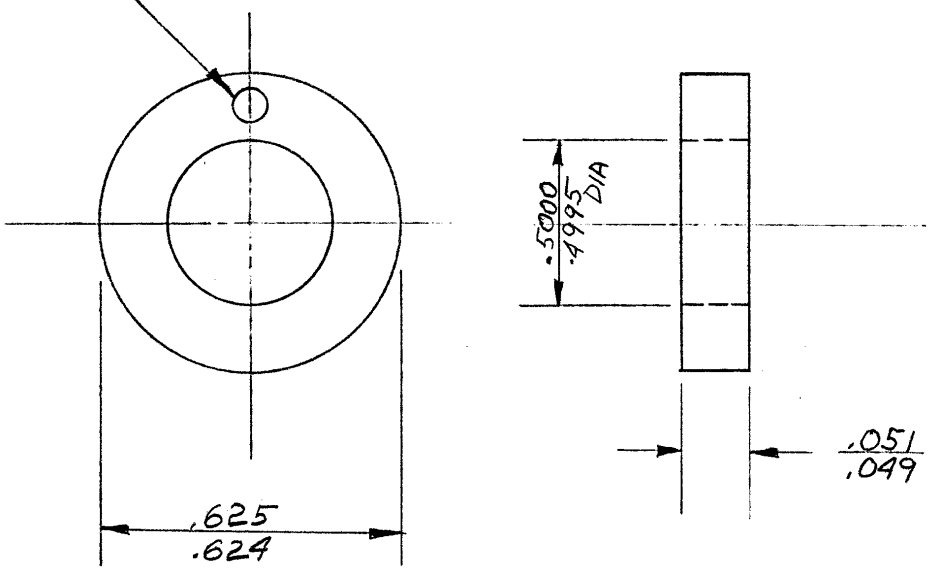
DWG. NO. A- 12554 ISSUE XP

.0625-.0630 REAM

JIG DRILL + REAM WITH JIG USED FOR CAM A125539



FACE RUNOUT .0008 MAX

DIAMETERS CONC. WITHIN .0005 T.I.R.

(1) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED

DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —

COMMERCIAL TOLERANCES APPLY TO STOCK SIZES

SCALE —

1ST. CONTRACT

MATERIAL

PHOSPHOR BRONZE

FINISH

SPACER

STAT

CHANGE

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CHKD

ENG.

DRAWN ML DATE 4/10/52 ENG. APP. DATE

CHECKED DATE APPROVED DATE

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DWG. NO. A- 12554 ISSUE XP

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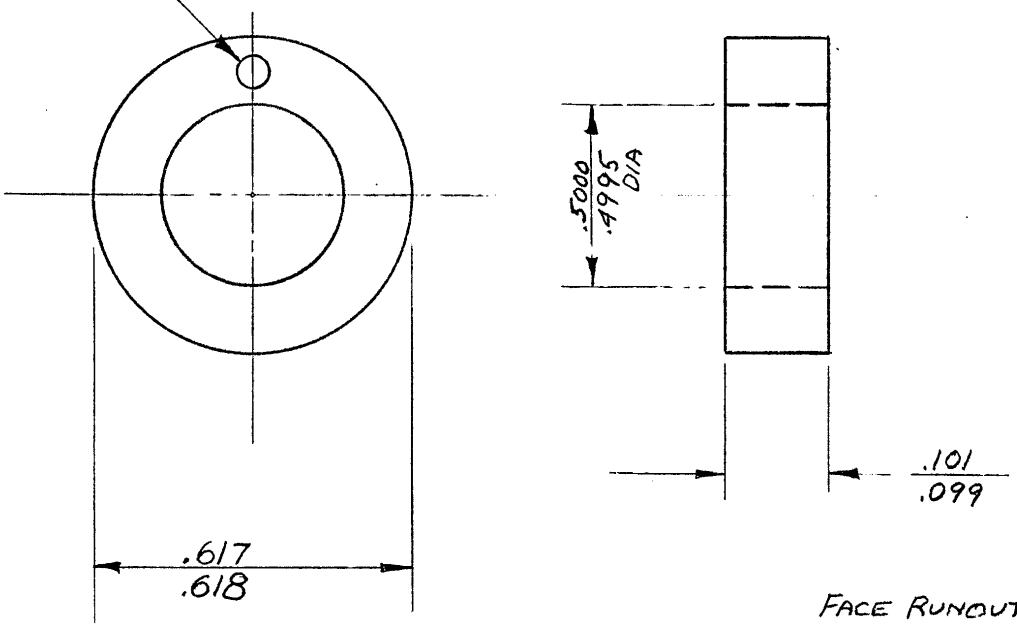
DWG. NO. A- 125542 ISSUE XP

.0625 $^{+.0005}_{-.0000}$ REAM

JIG DRILL & REAM WITH JIG USED FOR CAM A-125539



FACE RUNOUT .0008 MAX,

DIAMETERS CONC. WITHIN .0005 T.I.R.

1 REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	PHOSPHOR BRONZE	RING
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		FINISH	

CHANGE

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DATE		DRAWN MF	4/16/52	ENG. APPV.	DATE
DFTSMN		CHECKED	DATE	APPROVED	DATE
CHKD					
ENG.		NET WT	GR. WT	DWG. NO. A-125542	ISSUE XP

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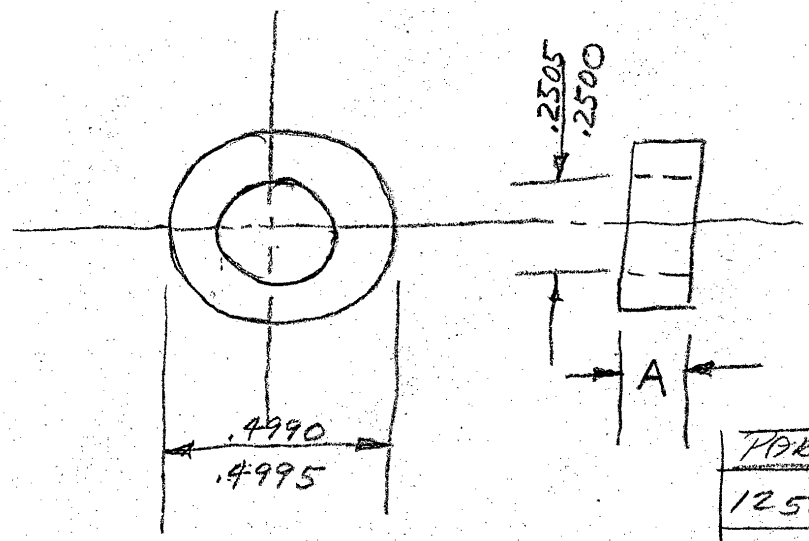
DWG. NO. A-125543 ISSUE XP



PART #	REQ	A
125543-1	1	.099 / .098
125543-2	1	.049 / .048

DIAMETERS CONC WITHIN .0005 T.I.R
FACE RUNOUT .0008 MAX

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES

SCALE
1ST. CONTRACT

MATERIAL
NYLON

FINISH

STAT
INSULATOR

CHANGE

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CHECKED DATE APPROVED DATE
DATE
DFTSMN
CHKD
ENG.

NET WT GR. WT

DWG. NO A-125543 ISSUE XP

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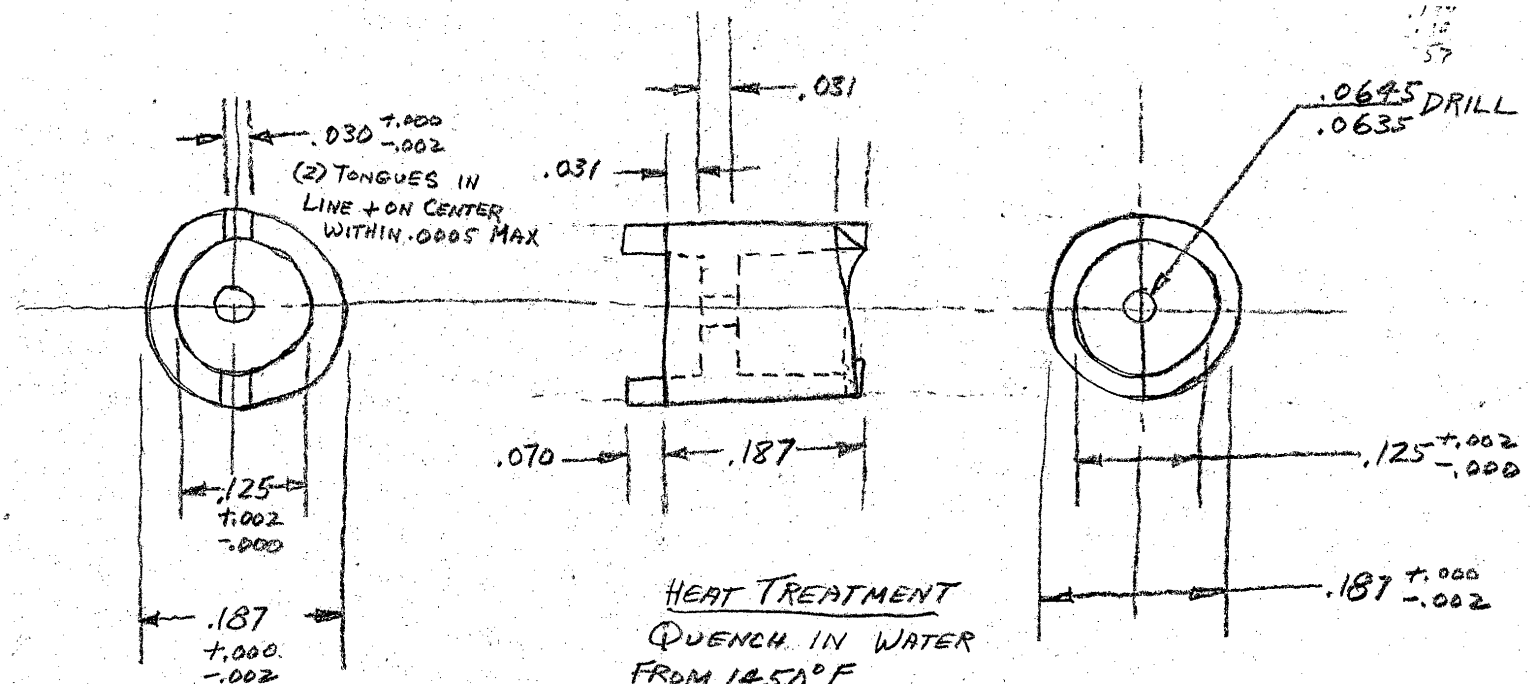
DWG. NO. A- 125544 ISSUE XP



HEAT TREATMENT
QUENCH IN WATER FROM 1450°F
DRAW 1 HOUR AT 350°F
ROCK - C 63/64

(2) REQ

ALL DIAMETERS CONC WITHIN .0005 T.I.R.

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	CARPENTER #11 SPECIAL OR EQUAL	CLUTCH
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			

CHANGE

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CHKD			
ENG.		NET WT	GR WT

DRAWN	DATE	ENG. APP.	DATE
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CHECKED	DATE	APPROVED	DATE

DWG. NO. A-125544 ISSUE XP

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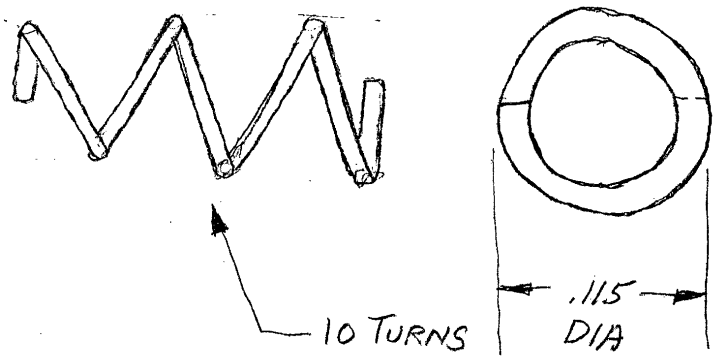
DWG. NO. A- 125545 ISSUE XP



(2) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE —	MATERIAL	STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	.010 SPRING .WIRE	SPRING
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
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ENG.		NET WT. GR. WT.	DWG. NO. A- 125545 ISSUE XP

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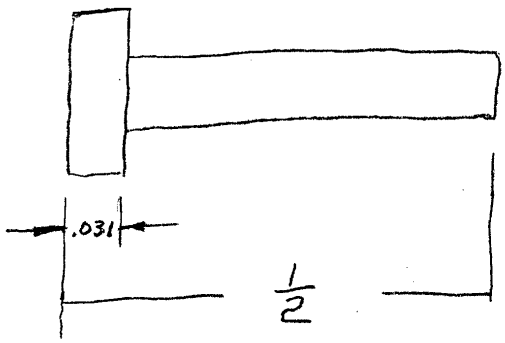
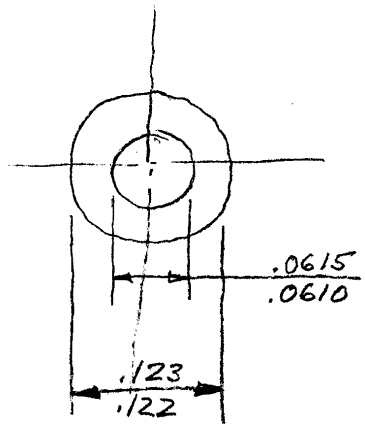
HEAT T[illegible]

DWG. NO. A-125546 ISSUE XP

QUENCH IN WATER
FROM 1450°F.
DRAW 1 HOUR AT 350°F
ROCK - C 63/64





(2) REQ

DIAMETERS CONC. WITHIN .0005 T.I.R

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	CARPENTER #11 SPECIAL OR EQUAL	PIN
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
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CHKD		NET WT. GR. WT.	DWG. NO. A-125546 ISSUE XP
ENG.			

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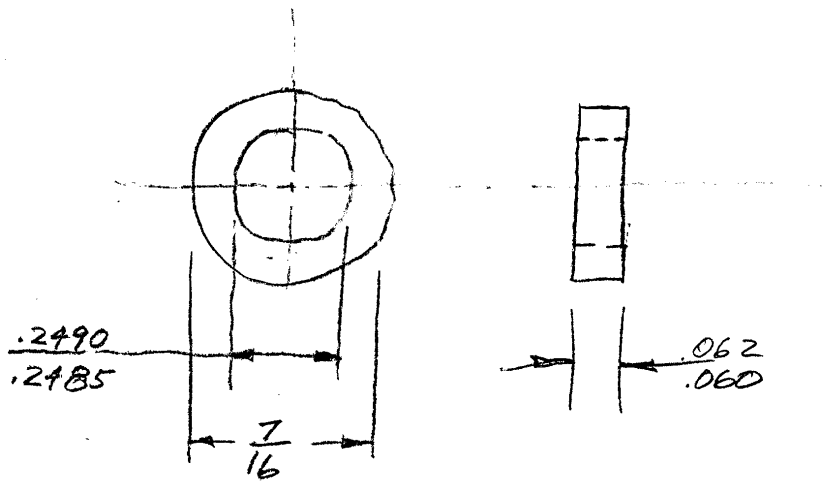
DWG. NO. A-125547 ISSUE XP



FACE RUNOUT .0005 MAX
DIAMETERS CONC. WITHIN .0005 T.I.R.

(1) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL
DEC. DIM. ± FRAC. DIM. ± ANG. DIM. ±	1ST. CONTRACT	CRS
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		

STAT

COLLAR

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ENG.	

FINISH

NET WT. GR. WT

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MK	4/17/53		
CHECKED	DATE	APPROVED	DATE

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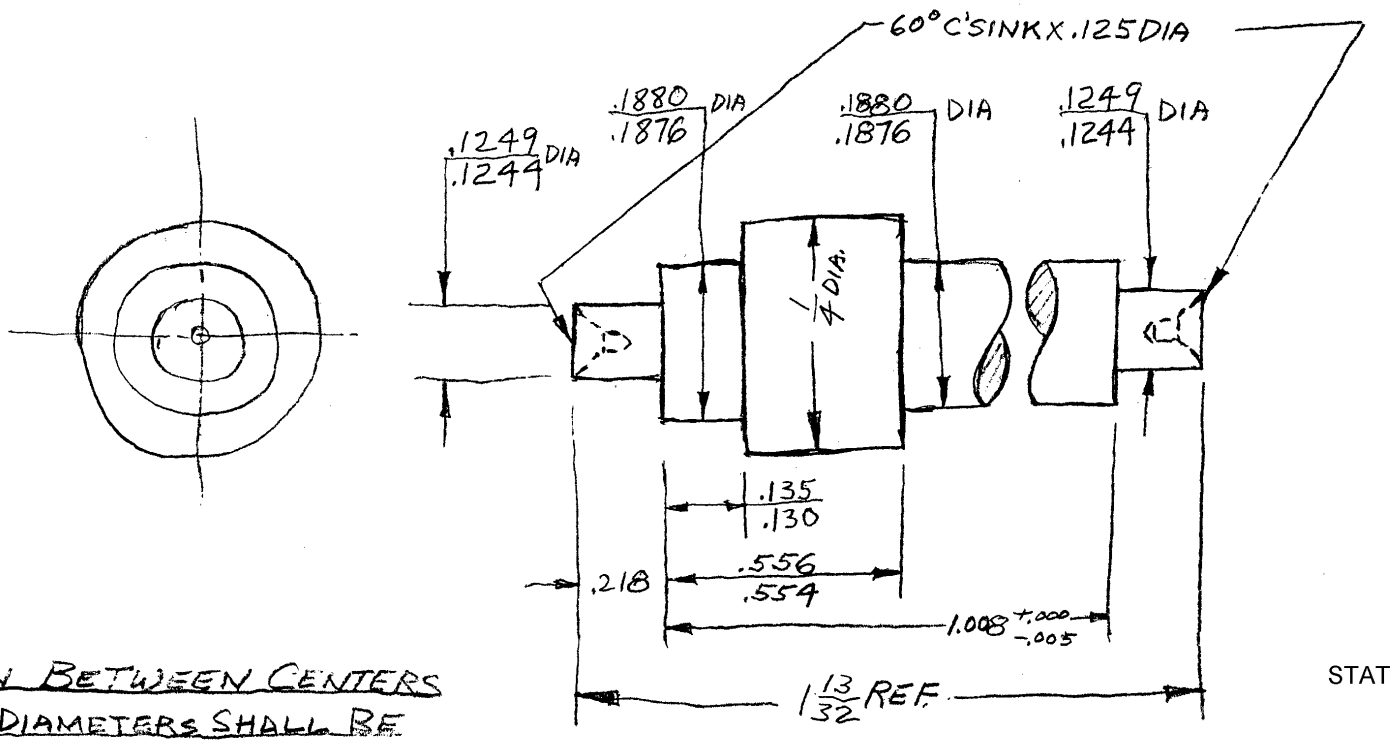
DWG. NO. A- 125549 ISSUE XP



TURN BETWEEN CENTERS
ALL DIAMETERS SHALL BE
CONCENTRIC WITHIN .0005 T.I.R

STAT

1 REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	SHAFT, WHEEL
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	HOT ROLLED LOW CARBON STEEL	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
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DATE			DRAWN MR DATE 4/23/56 ENG. APP. DATE
DFTSMN			CHECKED DATE APPROVED DATE
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ENG.			

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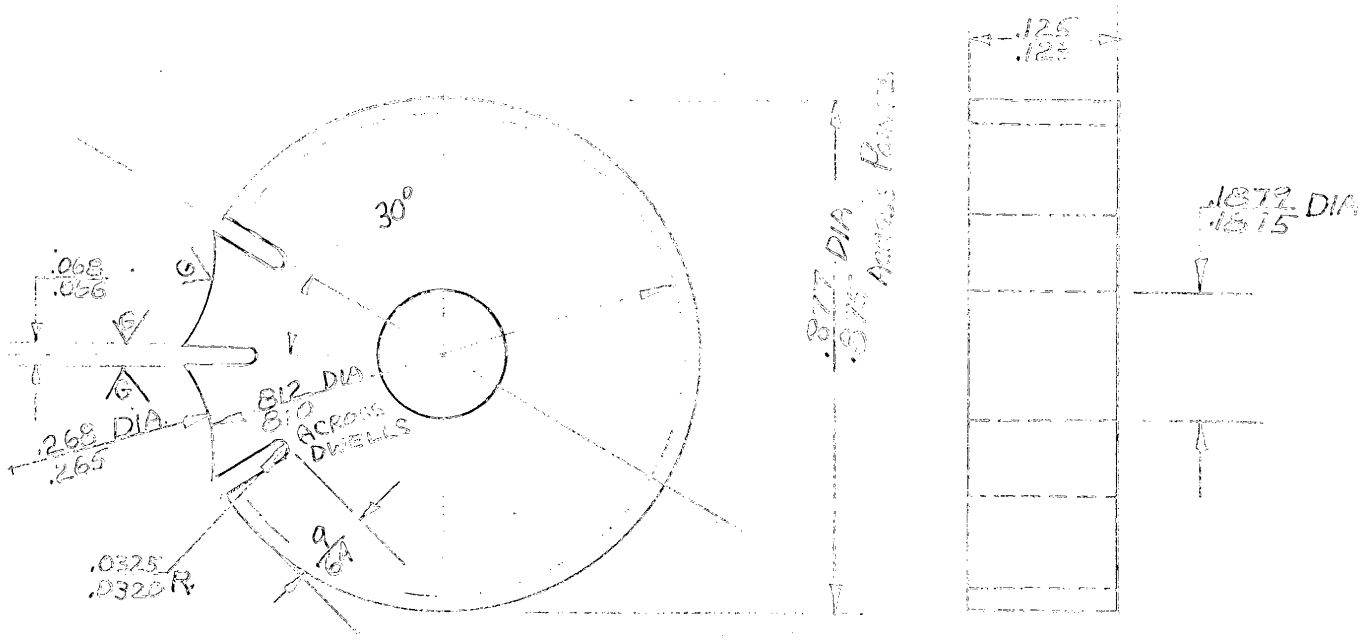
DWG. NO. A- 125550 ISSUE XP



V - GRIND TO SIZE AFTER HEAT TREATING

DIAMETRICAL CONC. WITHIN .0005 T.I.R.

FACE RUNOUT .0001 MAX.

(1) [illegible]

HEAT TREAT [illegible] STAT

QUENCH IN WATER

FROM 1450° F

DRAW 1 HOUR AT 350°

ROCK - C [illegible]

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	GENEVA WHEEL
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± 0°10'	1ST. CONTRACT	CARPENTER #11 SPECIAL [illegible]	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE: This drawing is part of an illustrated ser. If separated from the ser. it must be subjected to individual systematic review.		FINISH	
DATE			DRAWN MK DATE 4/9/56 ENG. APP. DATE
DFTSMN			CHECKED DATE APPROVED DATE
CHKD			
ENG.		NET WT. GR. WT.	DWG. NO. A- 125550 ISSUE XP

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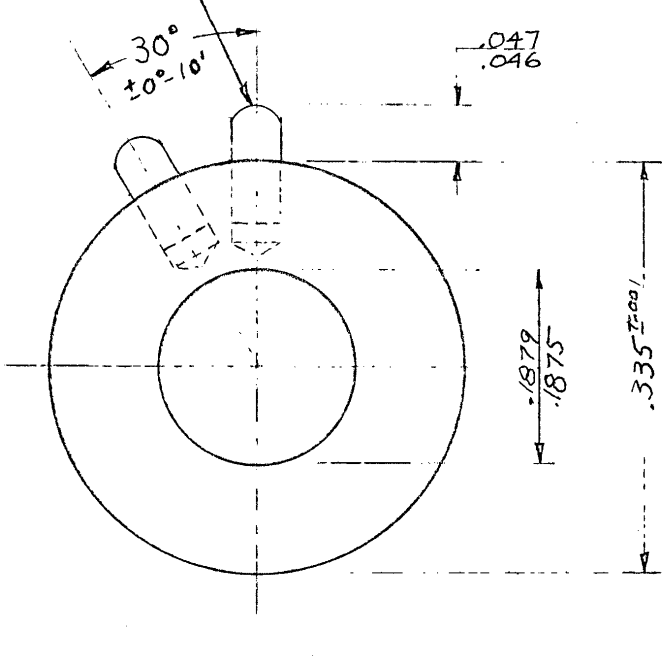
DWG. NO. A- 125551 ISSUE XP

.046 DIA. DRILL ROD
PRESS FIT (12) PINS
SPHERICAL RADIUS ON END OF PIN



ALL DIAMETERS CONC. WITHIN .0005 T.I.R.

FACE RUNOUT .0008 MAX

STAT

1 (REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ±0°-10'	1ST. CONTRACT	HOT ROLLED LOW CARBON STEEL	WHEEL, SPROCKET
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
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DFTSMN			CHECKED DATE APPROVED DATE
CHKD			
ENG.		NET WT. GR WT.	DWG. NO. A-125551 ISSUE XP

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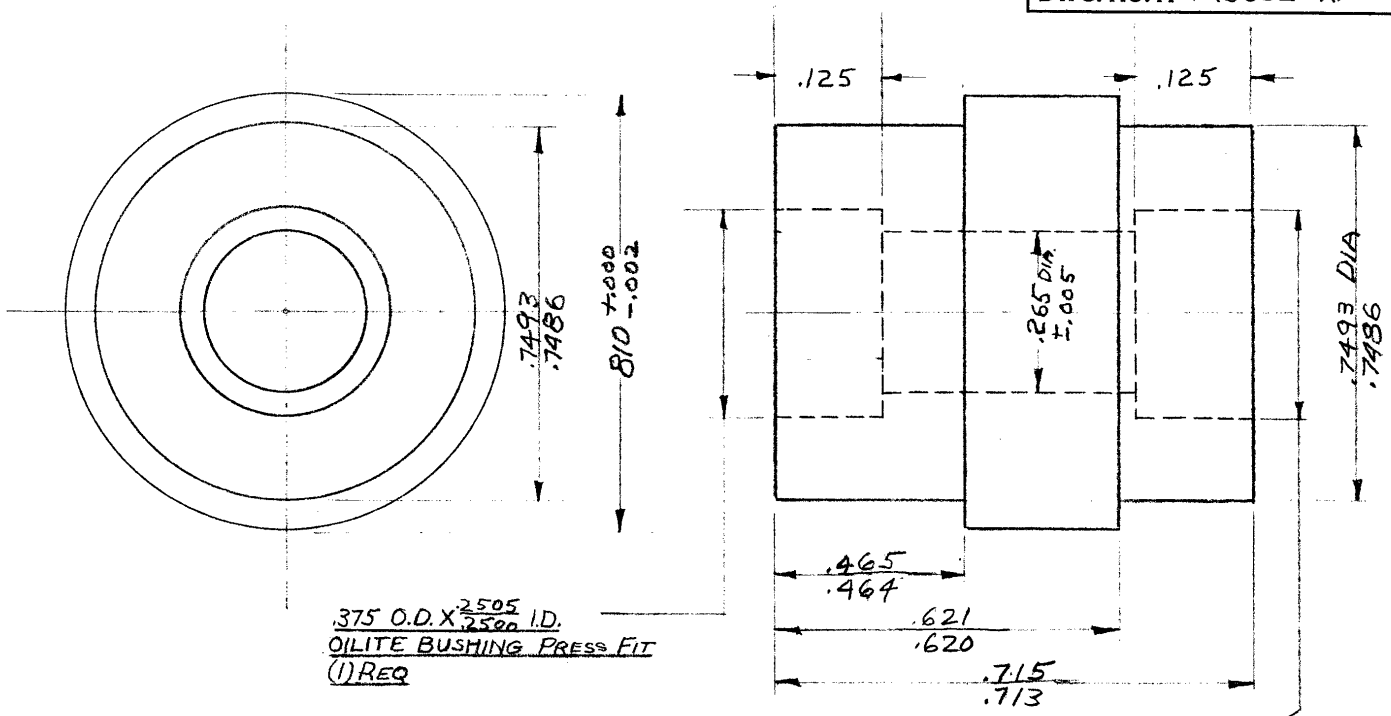
DWG. NO. A- 125552 ISSUE XP



.375 O.D. X .2505 / .2500 I.D.
OILITE BUSHING PRESS FIT
(1) REQ

.375 O.D. X .1880 / .1875 I.D. OILITE BUSHING
PRESS FIT (1) REQ

FACE RUNOUT WITH HOLES .0005 MAX

DIAMETERS CONC WITHIN .0002 T.I.R.

(1) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	ALUM 24S-T4	SPACER STAT
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			

CHANGE

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DATE		FINISH	DRAWN ML	DATE 4/24/52	ENG. APP. DATE
DFTSMN			CHECKED	DATE	APPROVED DATE
CHKD					
ENG.		NET WT. GR. WT.	DWG. NO. A-125552 ISSUE XP		

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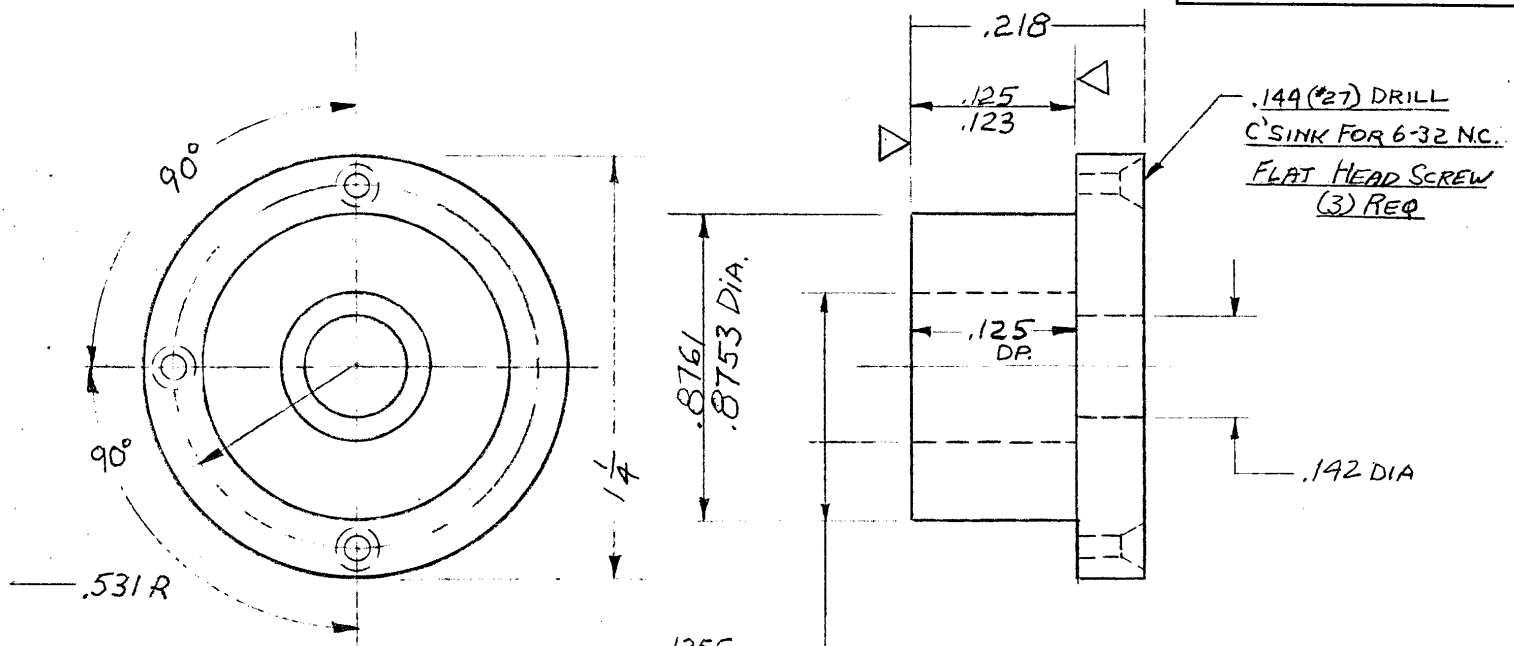
DWG. NO. A- 125553 ISSUE XP



(1) REQ

USED ON

STAT

TOLERANCES UNLESS OTHERWISE DESIGNATED		SCALE —	MATERIAL 24S-T4 ALUM
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —		1ST. CONTRACT	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			FINISH
CHANGE	This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.		
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DFTSMN			
CHKD			
ENG.		NET WT	GR. WT

FLANGE

DRAWN	DATE	ENG. APP.	DATE
M.P.	4/24/52		
CHECKED	DATE	APPROVED	DATE

DWG. NO. A-125553 ISSUE XP

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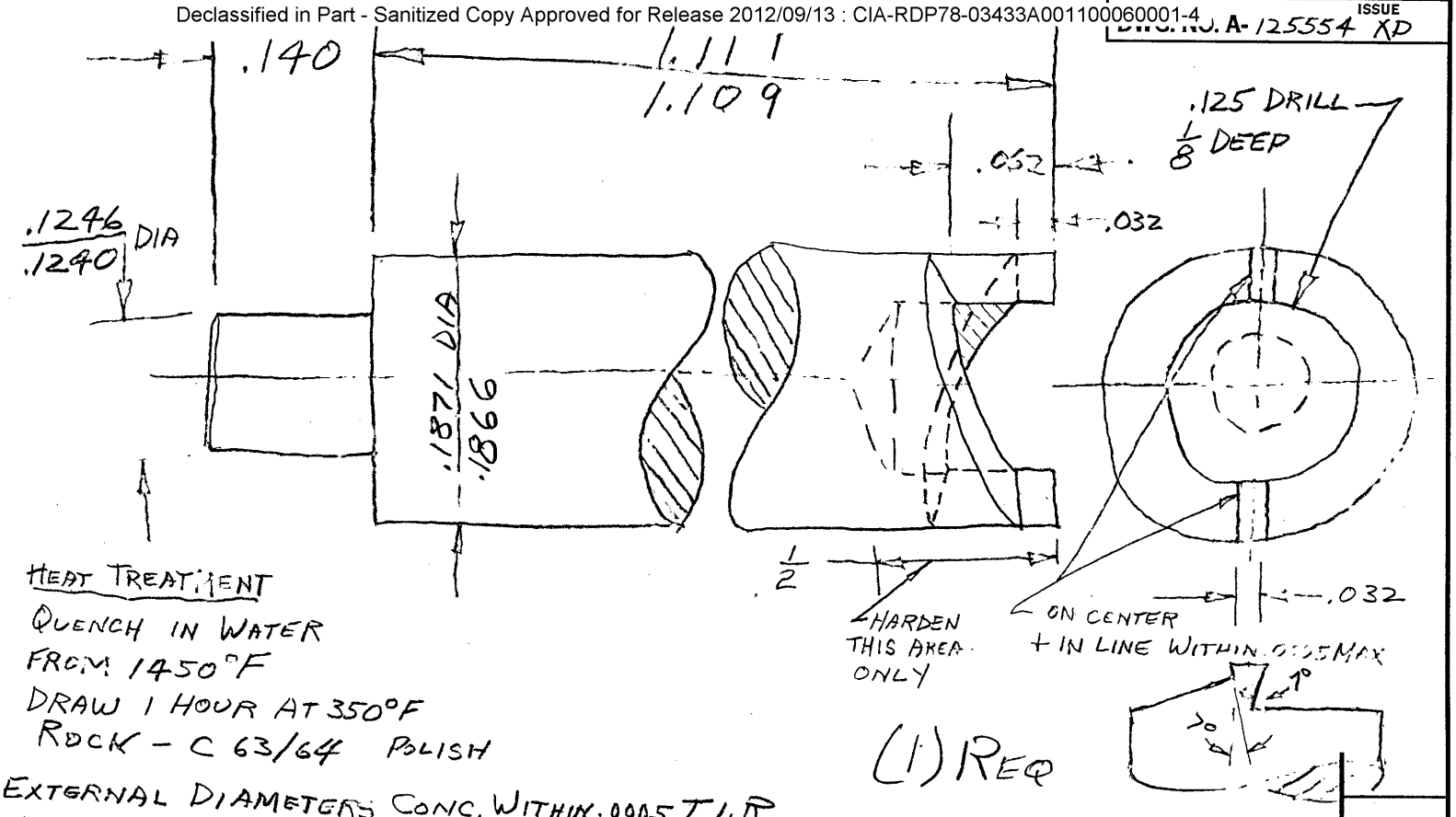
Declassified in Part - Sanitized Copy Approved for Release 2012/09/13 : CIA-RDP78-03433A001100060001-4

DWG. NO. A-125554 ISSUE XD



HEAT TREATMENT
QUENCH IN WATER
FROM 1450°F
DRAW 1 HOUR AT 350°F
ROCK - C 63/64 POLISH

EXTERNAL DIAMETERS CONC. WITHIN .0005 T.I.R.

(1) REQ

USED ON

STAT

SHAFT - BIDRE

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	CARPENTER #11 SPECIAL - OR EQUAL
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		

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DATE		DRAWN MK 4/25/62	ENG. APP. DATE
DFTSMN		CHECKED DATE	APPROVED DATE
CHKD			
ENG.		NET WT. GR. WT.	DWG. NO. A-125554 ISSUE XP

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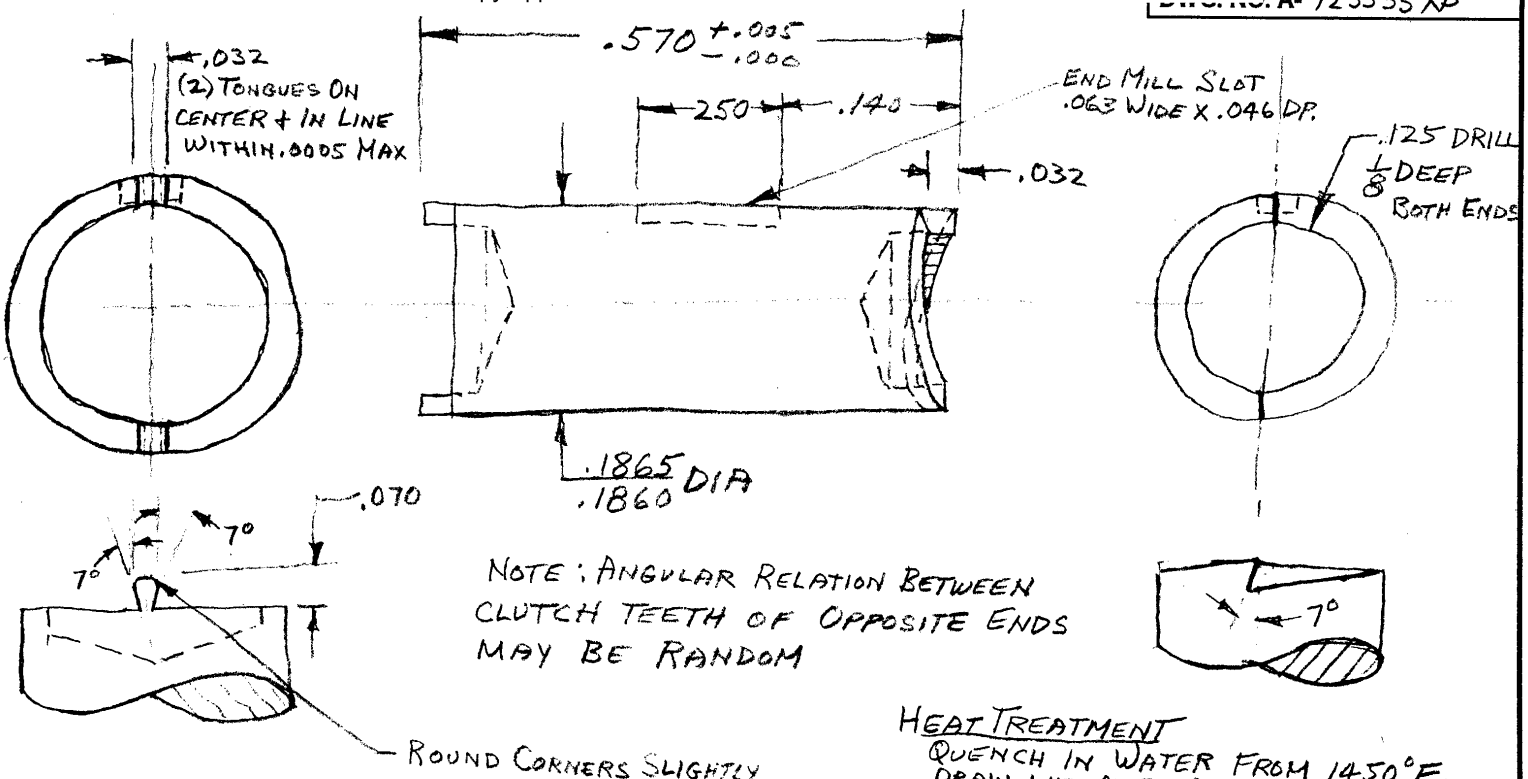
DWG. NO. A- 125555 ISSUE XP



NOTE: ANGULAR RELATION BETWEEN CLUTCH TEETH OF OPPOSITE ENDS MAY BE RANDOM

HEAT TREATMENT
QUENCH IN WATER FROM 1450°F.
DRAW 1 HR. AT 350° F ROCK C 63/64
POLISH

(1) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	CARPENTER #11 SPECIAL OR EQUAL	DRIVER
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE: This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.		FINISH	
DATE			DRAWN MR 4/25/62 ENG. APP. DATE
DFTSMN			CHECKED DATE APPROVED DATE
CHKD			
ENG.		NET WT. GR. WT.	DWG. NO. A-125555 ISSUE XP

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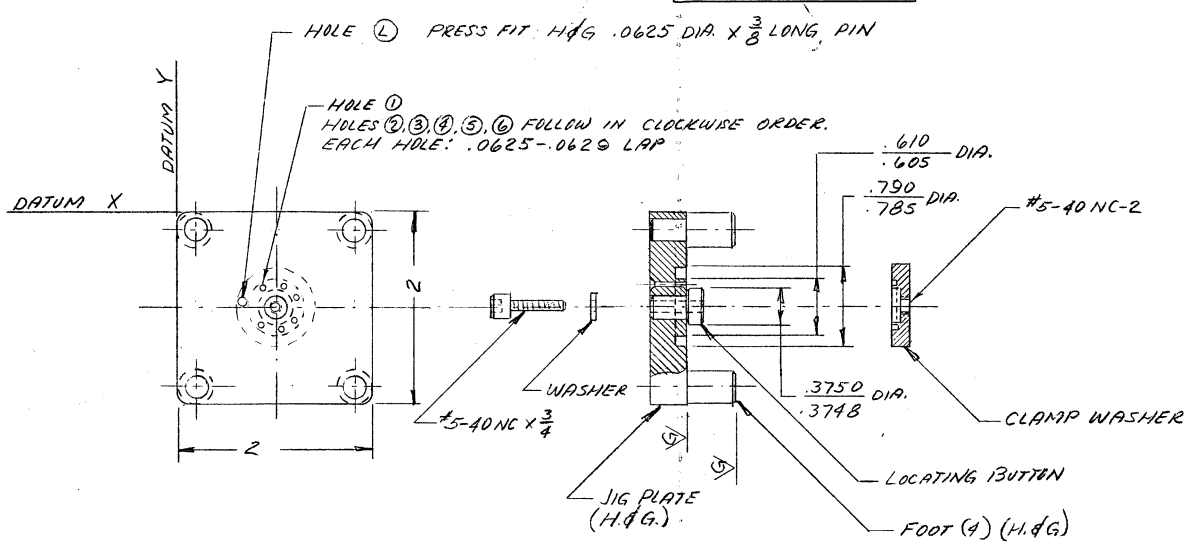
DWG. NO. B-



	X	Y
(L)	.6506	.9687
①	.8427	.8057
②	1.0413	.7534
③	1.2121	.8677
④	1.2396	1.0712
⑤	1.1054	1.2266
⑥	.9001	1.2291

HOLE LOCATION
TOLERANCE ± .0015

USE FOR DRILLING PARTS:

RING, DWG # A 125542
SPACER, DWG # A 125541
CAM, DWG # A 125539-1, 2

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TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	USED ON
DEC. DIM. ± — FRAC. DIM. ± — ANG. DIM. ±	FULL	GAGE STOCK & DRILL ROD	STAT

DRILL JIG

ISSUE		NET WT.	FINISH	DRAWN	DATE	ENG. APP.	DATE
CHANGE				1/13 25 MAR 52			
DATE		GROSS WT.		CHECKED	DATE	APPROVED	DATE
DFTSMN							
CHKD				DWG. No. B- 125556			ISSUE
ENG.							

"ALBANENE" No. 1988 K&E CO., N.Y. U.S.A.

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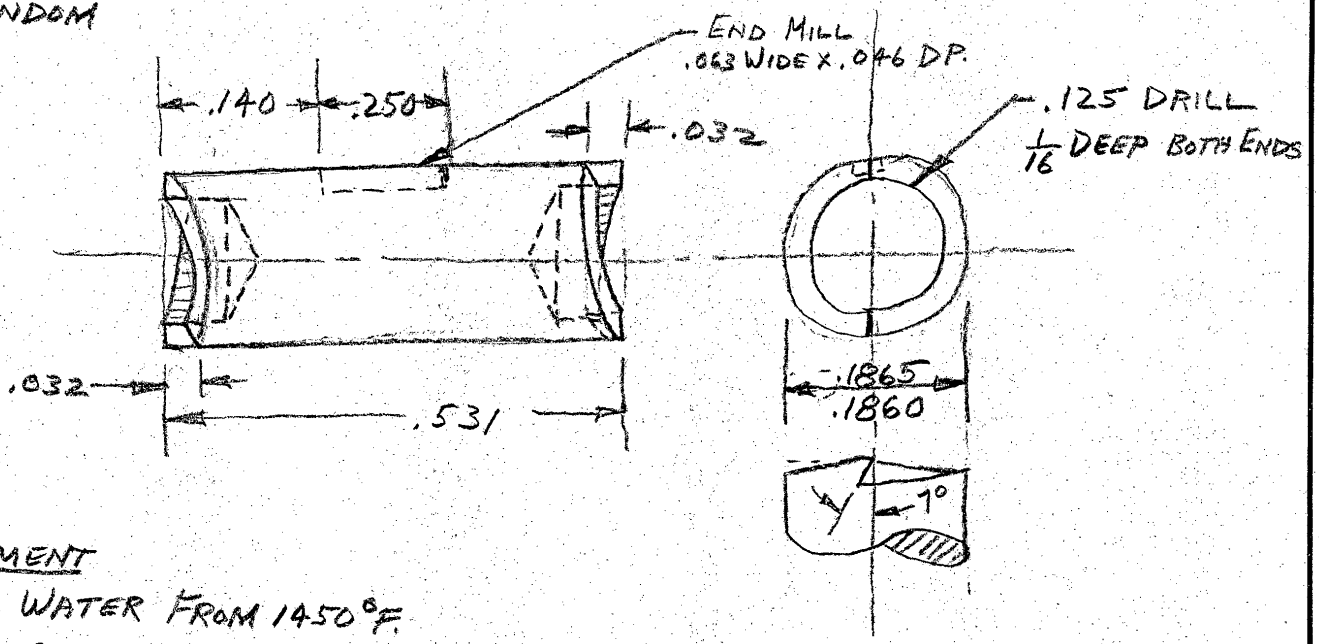
DWG. NO. A-125557 ISSUE XP

NOTE: ANGULAR RELATION BETWEEN CLUTCH TEETH OF OPPOSITE ENDS MAY BE RANDOM



HEAT TREATMENT
QUENCH IN WATER FROM 1450°F.
DRAW 1 HR AT 350° F. ROCK C 63/64
POLISH

(1) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	CARPENTER #11 SPECIAL OR EQUAL
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES		

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CHANGE	
DATE	
DFTSMN	
CHKD	
ENG.	

FINISH

NET WT. GR. WT.

STAT

DRIVER

DRAWN	DATE	ENG. APP.	DATE
M-L	4/25/57		
CHECKED	DATE	APPROVED	DATE

DWG. NO. A-125557 ISSUE XP

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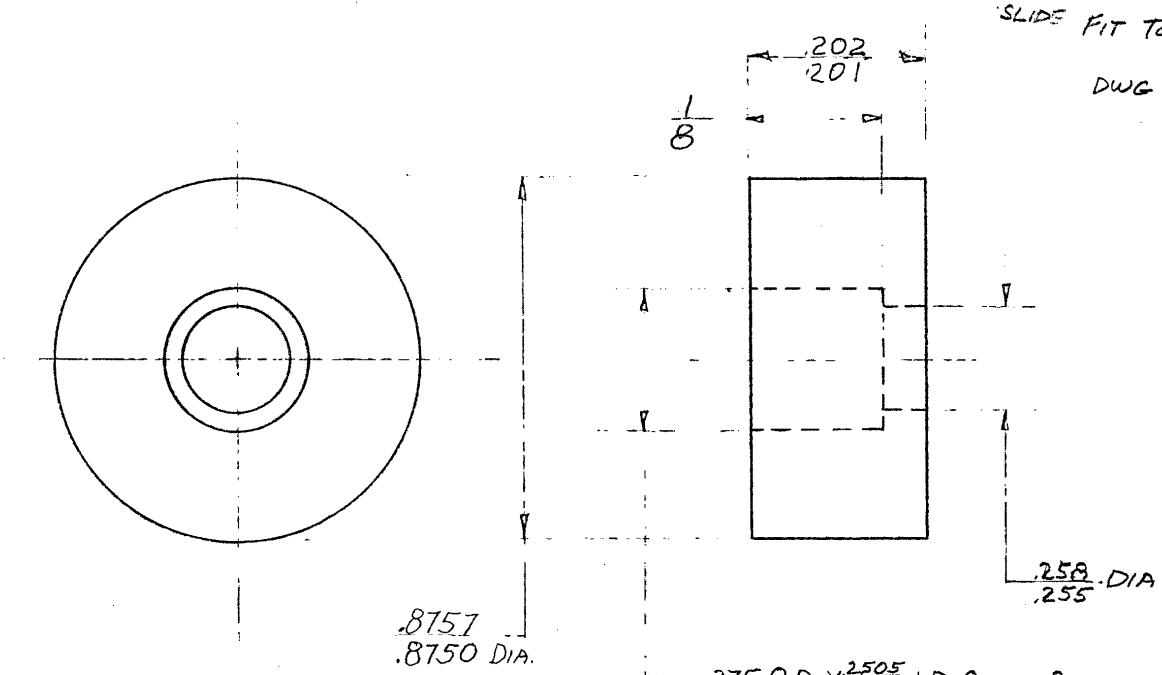
DWG. NO. A-125559 ISSUE XP

SLIDE FIT TO LATH SPEED BLOCK DWG B 125558



FACE RUNOUT TO HOLES .0005 MAX.
ALL DIAMETERS CONCENTRIC WITHIN .0002 T.I.R.

(1) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	24S-T4 ALUM	SPACER
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE: This document is part of an [illegible] file. If separated from the file it must be subjected to individual systematic review.		FINISH	
DATE			DRAWN MR 4/28/52 ENG. APPR. DATE
DFTSMN			CHECKED DATE APPROVED DATE
CHKD			
ENG.		NET WT. GR. WT	DWG. NO. A-125559 ISSUE XP

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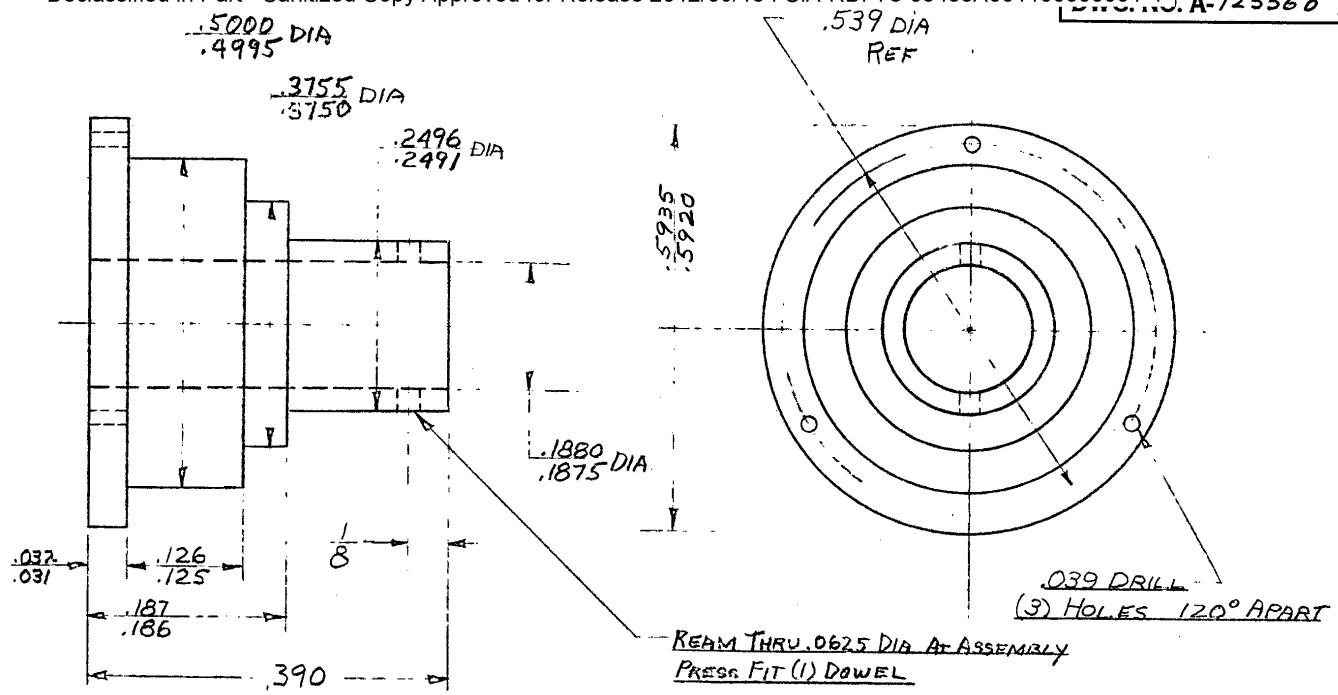
DWG. NO. A-125560 ISSUE XP



RUNOUT OF FACES NOT TO EXCEED .0005 MAX

ALL DIAMETERS CONC. WITHIN .002 T.I.R.

(1) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	HOT ROLLED LOW CARBON STEEL	HUB, GEAR
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE: This document is part of an historical file. If separated from the file it must be subjected to individual systematic review.		FINISH	
DATE			DRAWN MF DATE 4/29/57 ENG. APP. DATE
DFTSMN			CHECKED DATE APPROVED DATE
CHKD			
ENG.		NET WT GR WT	DWG. NO. A-125560 ISSUE XP

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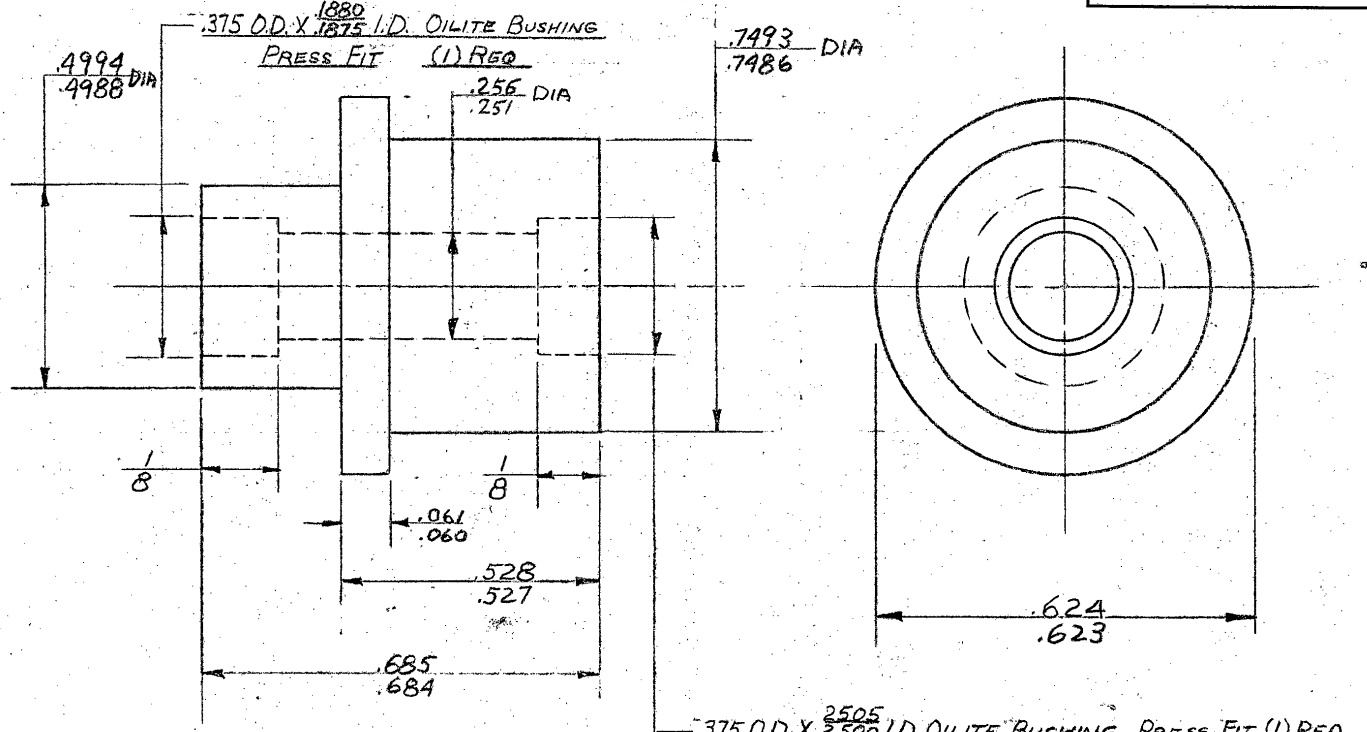
DWG. NO. A-125561 ISSUE XP



FACE RUNOUT TO HOLES WITHIN .0005 MAX

ALL DIAMETERS SHALL BE CONCENTRIC WITHIN .0002 T.I.R.

(1) REQ

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	SPACER STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	24S-T4 ALUM.	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
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DATE			CHECKED DATE APPROVED DATE
DFTSMN			
CHKD			
ENG.		NET WT. GR. WT.	DWG. NO. A-125561 ISSUE XP

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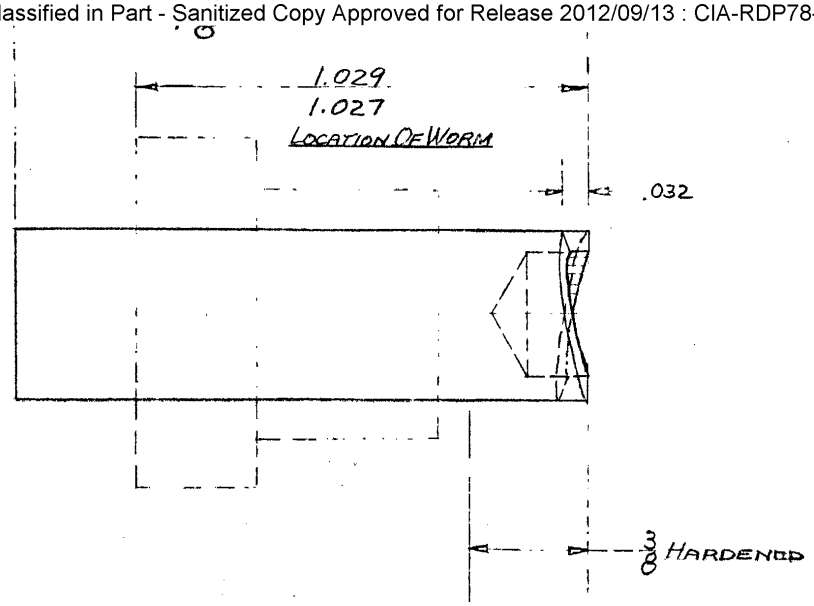
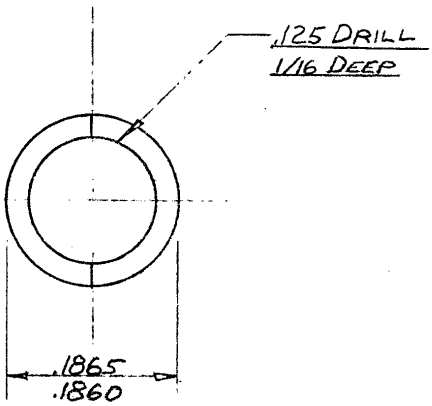
DWG. NO. A-125562 ISSUE XP





HEAT TREATMENT

QUENCH IN WATER FROM 1450°F
DRAW 1 HOUR AT 350°F ROCK-C 63/64

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	SHAFT STAT
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	1ST. CONTRACT	CARPENTER #11 SPECIAL OR EQUAL	
COMMERCIAL TOLERANCES APPLY TO STOCK SIZES			
CHANGE: This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.		FINISH	
DATE			DRAWN MRL DATE 4/30/62 ENG. APP. DATE
DFTSMN			CHECKED DATE APPROVED DATE
CHKD			
ENG.		NET WT. GR. WT.	DWG. NO. A-125562 ISSUE XP

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C. Load impedance will be approximately 2 megohms

d. Frequency response as specified below.

3. Winding #2B
   a. This winding shall be identical with winding #2A and so connected that the output of this winding combines with the output of winding #2A to form a push-pull output.
   b. The output of this winding shall not differ from the output of winding #2A by more than 1/2 decibel at any frequency in the range of 500 to 2200 cps.
4. Winding #3
   a. The load impedance is to be a half wave rectifier (vacuum tube diode) in series with some resistor R_1. This resistance is to be the value specified by the transformer designer as correct for type of transformer. This resistor must not be greater then 1.5 megohms nor less than 100,000 ohms
   b. Maximum direct current resistance of this winding is to be 10% of the value of the resistor specified by the transformer designer in paragraph 4a above
   c. Output voltage at 1000 cps, with primary voltage at 70 volts shall be 150 volts plus or minus 1/2 decibel.
   d. Frequency response as specified below.
5. Frequency response
   a. The circuit illustrated below will be used to test the frequency response of the transformer.

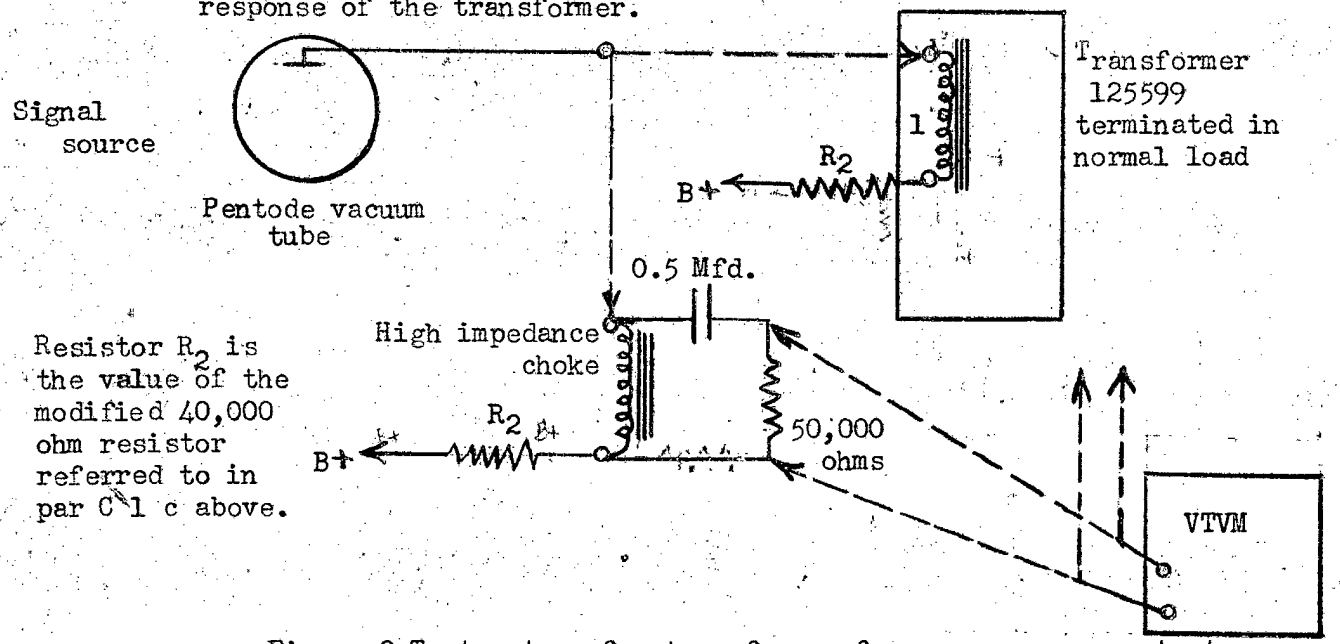

Figure 2 Test set-up for transformer frequency response tests

STAT

ADDITIONAL REQUIREMENTS ON OTHER SHEETS OF THIS SPECIFICATION

ISSUE XP 1/24/52	1ST JOB NO. 7100-3	
This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.	ITEM / ASSEM.	Sheet #2 of 3 sheets Transformer Design Specification
	SCALE / DRAWN 1/24/52 MR	
	C'H'K'D / APP'D / ENG. MR 1/24/52	DWG. A-~~1225599~~-XP

125599

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B. The pentode will be adjusted with the dummy load so that the plate impedance of the tube is 1/2 megohm, and so that 70 volts RMS is developed across the 50,000 ohm resistor using the frequency of the test. The plate current will any desired value between 0 and 6 milliamperes.

c. The pentode plate circuit will be transferred to the primary of transformer 125599. The VTVM will be transferred to the secondary winding of the transformer being tested for response.

d. The response of each winding(secondary) shall be as follows:

(1). The peak response shall lie between the limits of 800-1800 cps.

(2). The response within the range 800-1800 cps shall be down from the peak by no more than 1/2 decibel.

(3). The response at 500 and 2200 cps shall be down from the peak by approximately 3 db.

(4). The resonse below 500 cps and above 2200 cps shall be down by more than 3 decibels. Greater attenuation of frequencies outside the range of 500 to 2200 cps is desirable.

D. Physical Dimensions

1. Maximum overall dimensions are 1 1/8 inches diameter by 1 3/4 inches long.
2. Area of protrusion of terminals is 1/2 inches by 3/4 inches maximum.
3. Center-to-center distance between mounting studs, approximately 3/4 inch. Studs to protrude 1/4 inch from end of can, and to be threaded as 6-32 NC-2 screw.

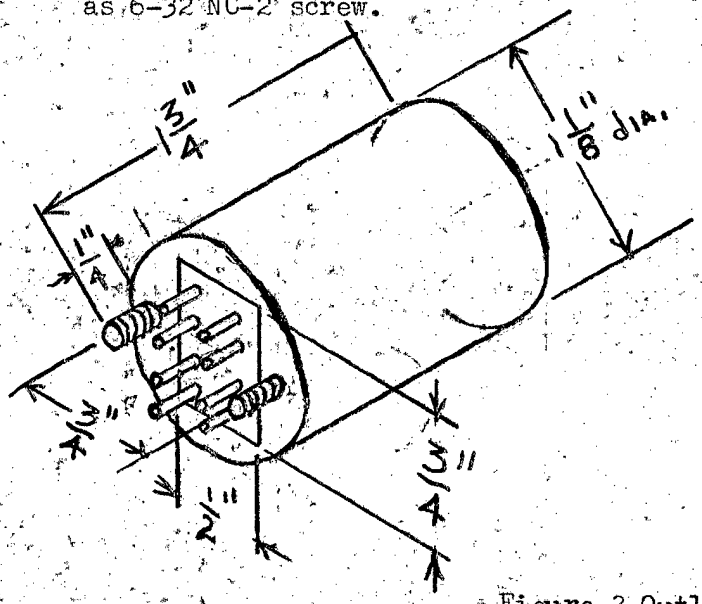

Figure 3 Outline Dimensions

ADDITIONAL REQUIREMENTS ON OTHER SHEETS OF THIS SPECIFICATION

STAT

ISSUE XP 1/24/52	This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.	IST JOB NO. 7100-3	Sheet #3 of 3 sheets Transformer Design Specification
		ITEM / ASSEM.	
		SCALE / DRAWN 1/24/52 MR	
		C'H'K'D / APP'D / ENG. MR 1/24/52	DWG. A-125599-XP

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DESIGN SPECIFICATION FOR TRANSFORMER 125599

A. TYPE. Push-pull interstage submineature transformer with separate AGC (automatic gain control) winding.

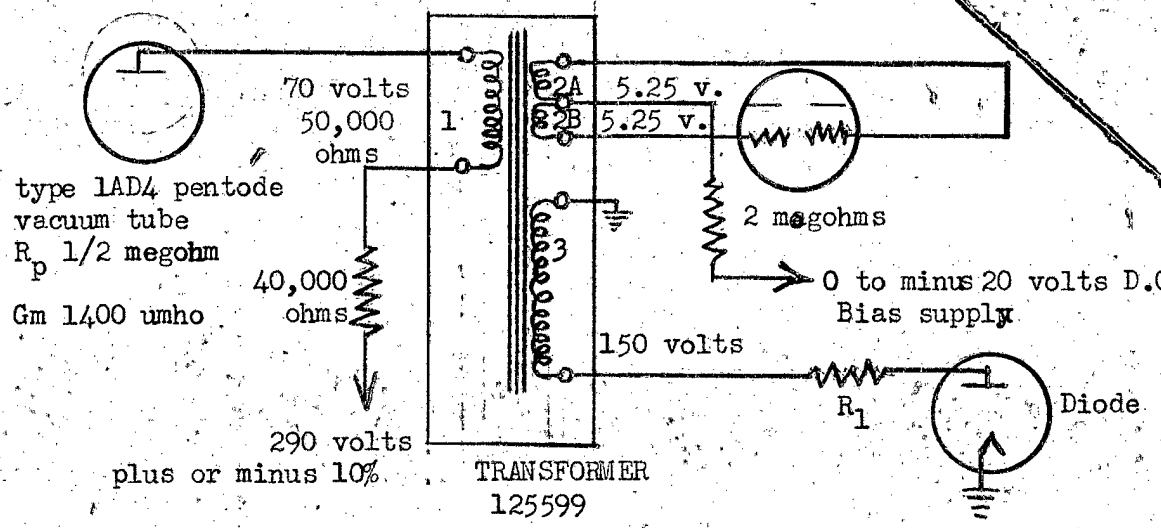

Figure 1 Circuit diagram

B. General Requirements

1. Conformance to Navy Specification 16-T-30 (Bureau Of Ships) required. Type approval under sample order not required.

C. Performance Requirements

1. Winding #1
   a. Direct Current through winding may be any value between 0 and 6 milliamperes during normal operation.
   b. Impedance of primary winding must be approximately 50,000 ohms when 70 volts RMS is impressed at frequencies between 800 and 1800 cps.
   c. Maximum direct current resistance of primary winding is 40,000 ohms. The 40,000 ohm external resistor will be changed in application so that the total direct current resistance in the plate circuit of the tube is 40,000 ohms.
   d. Peak signal voltages of 100 volts RMS must pass through the transformer with little distortion and without damaging the transformer.
2. Winding #2A
   a. Output voltage at 1000 cps, with primary voltage at 70 volts shall be 5.25 volts plus or minus 1/2 decibel.
   b. Maximum direct current resistance of this winding shall be 2 megohms. The 2 megohm external resistor will be changed in application so that the total direct current resistance in the grid circuit of the tube is 2 megohms.

STAT

ADDITIONAL REQUIREMENTS ON OTHER SHEETS OF THIS SPECIFICATION

ISSUE XP 12/4/52	This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.	IST JOB NO. 7100-3	Sheet #1 of 3 sheets Transformer Design Specification
		ITEM / ASSEM.	
		SCALE / DRAWN MR	
		C'H'K'D / APP'D / ENG. MR	DWG. A-125599-XP

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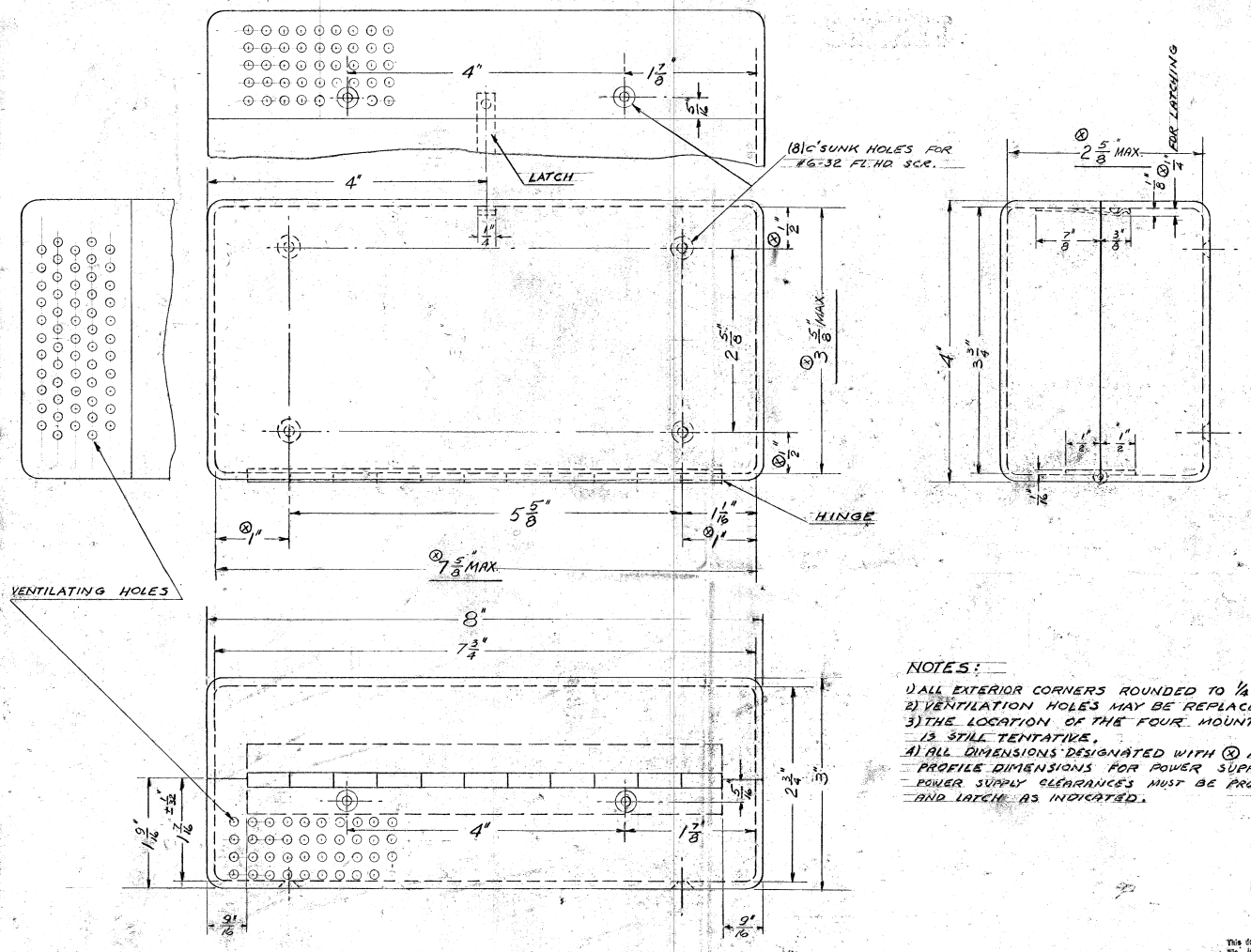

DWG. NO. C-125601 ISSUE XP

NOTES:

1) ALL EXTERIOR CORNERS ROUNDED TO 1/4"R, ALL FILLER RADII = 5/32"R.
2) VENTILATION HOLES MAY BE REPLACED BY GRILLES.
3) THE LOCATION OF THE FOUR MOUNTING HOLES IS STILL TENTATIVE.
4) ALL DIMENSIONS DESIGNATED WITH ⊗ ARE MAXIMUM OVERALL PROFILE DIMENSIONS FOR POWER SUPPLY - ON DESIGNING POWER SUPPLY CLEARANCES MUST BE PROVIDED FOR HINGE AND LATCH AS INDICATED.

STAT

STAT

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TOLERANCES UNLESS OTHERWISE DESIGNATED	DEC. DIM. ± .005" FRAC. DIM. ± 1/64 ANG. DIM. ±0°30
SCALE	1/1
MATERIAL	OF CASE: WELDED AL. ALLOY .125 THK.
FINISH	OF CASE: BLACK ANODIZED
NET WT.	
GROSS WT.	
USED ON	
	POWER SUPPLY - OUTLINE OF CASE WITH PROFILE DIMENSIONS
ISSUE	
CHANGE	
DATE	
DFTSMN	
CHKD	
ENG.	
ENG. APP. DATE	2 25 51
CHECKED DATE	
APPROVED DATE	
DWG. No. C-125601 ISSUE XP	

"ALBANENE" No. 1140M KEUFFEL & ESSER CO., N.Y. 8

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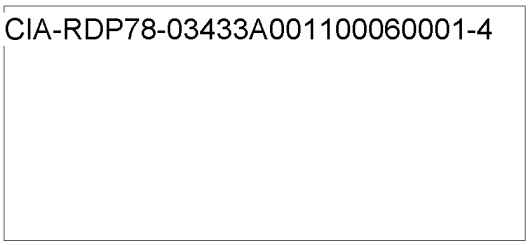

ILLEGIB

25X1

Specification 125600

13 Sheets

Aug 31, 1951

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Specification
125600

[redacted] 25X1

1. Scope

a. This specification is intended to give the requirements for design, construction, and operation of a unit called a power supply unit.

b. This specification is intended to give the requirements for a list of non-fabricated parts and components employed in the power supply unit.

c. This specification is intended to give the requirements for a set of manufacturing drawings giving all details required to manufacture this power supply unit.

2. Classification

a. The equipment, parts list, and drawing referred to in this specification, as well as this specification, are classified matter within the meaning of the Espionage Act (U.S.C. 50 :31, :32). Disclosure of this matter to any unauthorized person is prohibited by law.

3. Identification of Parties Concerned

a. [redacted] is 25X1
to be the designer and the supplier of the power supply units, the parts list, and the drawings covered by this specification. These items will be delivered to [redacted] 25X1
[redacted] for resale to one of its 25X1
customers.

b. [redacted] is hereinafter referred to as the subcontractor. 25X1

c. [redacted] is hereinafter referred to as the prime contractor.

d. The customer who will receive the units will hereinafter be referred to as the customer.

4. Design Criteria

a. The design must be such that selected parts are not required to meet the requirements of this specification. For the purpose of this specification, selected parts are defined as one or more of the following:

(1) Those parts which are covered by a component specification applicable to this equipment specification and which must be

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25X1

manufactured to tolerances which are different from those given in the specification.

(2) Those parts which cannot be produced to the tolerances required by the design by a regular manufacturer of the product and must therefore be obtained by selection from larger quantities manufactured to broader tolerances.

(3) Those parts which are manufactured to closer tolerances than are regularly held by the parts manufacturer, and for which no delivery quotation can be obtained for a quantity of 1000 units in 17 weeks.

b. The design must be such that each component is employed within the recommended limits of usage. Where components are covered by subsidiary specifications, the component must be employed within the limits of usage given in that specification.

c. The design must be such that it must be possible to fabricate all non-standard components in the plant of the prime contractor at the given address without major changes in quantities of 1000 units per year. For the purposes of this specification major changes will be those which require a total expenditure of $25,000.00 or more. Molded, cast, and sheet metal parts are exempt from this requirement. For the purpose of working within this requirement, the subcontractor may, upon request, inspect the plant of the prime contractor.

d. Where adequate space within the unit is available, space will be provided to mount components which vary over the entire range of allowable sizes given in the applicable specification for that component. Where space does not permit this, the component will be identified on drawings and parts lists by the manufacturers designation for the part, and the identification given in the applicable component specification will follow parenthetically.

e. The design must be such that parts and components which are easily replaced will have a service life of at least 2,000 hours with 2,000 starts during the period of life. This refers to plug in components such as vibrators and vacuum tubes. Parts which are more difficult to replace will have a service life of at least 5,000 hours with 5,000 starts during the period of life. This refers to components requiring the soldering of wires and a set of tools to replace.

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SECRET

25X1

5. Applicable Subsidiary Specifications

a. The subcontractor will design the unit to employ materials and components which conform to the following list of specifications wherever components which conform to the following specifications meet the performance requirements of this equipment.

JAN-C-5	JAN-R-11	JAN-R-184	16-T-30 (Bureau of ships dated 15 Aug.1945)
JAN-C-20A	JAN-R-19	JAN-C-76	
JAN-C-62	JAN-R-22	JAN-T-152	
JAN-C-91	JAN-R-26	JAN-I-225	JAN-P-13
JAN-C-25	JAN-R-93	JAN-I-A	JAN-P-14

b. Due to extreme miniaturization requirements, the subcontractor is likely to ~~require~~ find that deviations from the above requirement are necessary. The deviations will be given for specific cases upon application of the subcontractor.

6. Construction Requirements

a. Finishes will be in accordance with the following requirements:

(1) The unit and its components must be treated for tropical use per the requirements of specification JAN-T-152. A statement of treatment required by paragraph E1 of JAN-T-152 will be prepared by the subcontractor and submitted to the prime contractor for approval before final units are treated for tropicalization.

(2) Panels, frames, and surfaces which are visible with the unit in storage or in service will be finished black in color. Aluminum parts will be black anodized. Steel and brass will be non-spectral black oxidized to match the aluminum parts. All black surfaces will match a sample which will be supplied by the prime contractor upon request of the subcontractor.

(3) Where functionally possible, nuts, bolts, and lockwasher screws will be made of steel, cadmium plated, and treated for iriditing by a process equal to Iridite #3 as furnished by the Allied Research Products,Inc., 4004 E. Monument St., Baltimore 5, Maryland.

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25X1

(4) Where functionally possible, steel parts will be bondarized, primed with zinc-chromate primer, and painted with black semi-gloss enamel. Steel parts which cannot be so finished will be cadmium plated and iridited as steel screws above. Steel parts which cannot be treated in either of the processes will be fabricated of stainless steel.

(5) Copper, brass, and bronze parts will be nickle plated where possible. Where not possible, parts will be given no plating treatment.

(6) Electrical contact screws will be nickle plated. Solder lugs will be tin (solder) dipped.

(7) Pressure contacts will be silver (plated or solid), or of other precious metals selected for long life under conditions of service.

(8) Plating thickness will conform to the following list.

(a) Cadmium on steel, minimum .0003 inches.

(b) Nickle on steel requires copper flash between steel and nickle. Copper .0003 inches minimum. Nickle .0004 inches minimum.

(c) Nickle on brass, copper, or bronze .0004 inches minimum.

(9) All parts except aluminum parts will be insulated from the aluminum frame or from the aluminum detail to which they fasten by use of a coat of insulating varnish at assembly, where such insulation does not adversely affect the operation of the equipment.

(10) The exterior surfaces of hermetically sealed components will conform to the requirements for finish of this paragraph. However, interior need not conform. Components which are covered by separate specifications will have their finishes conform to the separate specification when those specifications are in conflict with the above requirements. However, when the above requirements are permitted by the separate specification, then the requirements will be complied with.

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b. Molded and laminated thermosetting plastic will be black in color. In instances where component manufacturers do not regularly supply their product with black plastic, then natural color may be employed. Grade LTS-E-4 per specification JAN-P-13, or equal, will be employed for use in all fabricated parts having electrical insulating functions. Grades MTS-E-1, 2, 3, and 4 per specification JAN-P-14 will be employed for molded parts having electrical insulating functions.

c. Outline dimensions will conform to the requirements given on drawing 125601. Certain requirements are given as maximum dimensions on drawing 125601. However, it is to be noted that certain dimensions employed for mounting and for matching the panel sides to the case are given as dimensions which must be held to the tolerances indicated.

d. Switches, fuses, lights, etc. will be flush mounted with the surface of the case.

e. All mating parts will be machined finished.

f. Tubes and vibrators, if employed, will be accessible upon removal of the cover.

g. The unit will include a miniature meter for the purpose of determining input voltages.

h. The output power of the supply shall terminate in a six prong flush mounted female plug capable of engaging a male plug equal to #P-306-CCT manufactured by H. P. Jones. The individual connections are identified in paragraph 7.c.(5) below.

i. The A.C. power input wires will be 6 feet long, plus or minus 2 inches measured from power plug to the point at which the wire passes through the panel. The power cable or power plug will be in accordance with drawing 125500 and will be furnished for the final 10 units by the prime contractor. The subcontractor will furnish an equivalent power cable terminating in a standard parallel prong male power plug on all units which precede the final 10 units. A separate battery power cable, terminating at the battery in a pair of clips, equal to Mueller Electric Co. #24A with #26 insulators will be provided. If it can be shown consistent with the other requirements, the A.C. power cable may be employed as a part of the D.C. power connections. The attention of the subcontractor is invited to the

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requirements of paragraph j. directly below which relates to the storage of these cables.

j. Space will be provided within the cover of the unit for all cables and power connections.

k. All power cables will be provided with means for relieving the electrical connections of mechanical strain incident to a manual pull on the power cable. All power cable entrance paths will be free of sharp edges which may cut through cable insulation.

l. All screw threads will be American National Form, national fine series and national coarse series as detailed in Handbook H-28 of the National Bureau of Standards issue of February 17, 1945 and its supplement issued June 15, 1949. The following are prohibited:

(1) Use of non-standard threads except where required by a specification listed in paragraph 5a above or where such a thread is the accepted commercial standard, such as in toggle switches and potentiometers.

(2) The use of national fine series in treaded aluminum parts.

(3) The use of national fine series of threads on phenolic parts. The use of threads on phenolic parts thiner than 1/8 inch. The use of threads on molded phenolic parts without threaded inserts.

(4) Use of aluminum treaded parts in holes tapped into aluminum parts.

(5) The use of a non-standard thread on a fabricated part where the express permission of the prime contractor has not been obtained.

(6) The use of self tapping screws.

The following are required:

(7) Set screws will be of the cup-pointed, allen head type made of hardened corrosion resistant steel or made of hardened steel coated with a copper flashing, cadmium plating, and iriditing.

(8) Hardened shafts which are engaged with set screws will be provided with set screw indentations capable of preventing slippage.

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(9) Each set screw will be locked into place with locking compound equal to Blue Glyptal Enamel as made by General Electric Co. The glyptal will not be permitted to enter the head of the screw so as to prevent adequate gripping of the set screw wrench.

(10) All exterior screws will be of the flat head type and will be finished to match the exterior of the case or panel. Countersunk recesses will be provided for each flat head screw so that the screw does not protrude above the surface in which the countersink is made.

m. The weight of the power supply, without the outer case is not to exceed 4 lbs. 8 ounces.

n. All plugs, jacks, switches, power cables, terminal strips are to be properly identified by markings. These markings are not to identify the subcontractor or prime contractor in any way. This marking is to be silk screened or engraved. Components which bear standard manufacturers markings are not to have those markings removed.

o. Tubes and all other components will be properly supported so that when the unit is subjected to the drop test detailed in paragraph 7d.(2) of this specification, no damage occurs.

p. The unit must conform to accepted standards for engineering, machining, selection of materials, use of materials, and methods of assembly.

q. Gears and bearings, when employed, must be permanently lubricated so that the unit can withstand long periods of storage and then operate satisfactorily for the active life period of the unit. All mating bearing surfaces will be machined. All shafts, cams, cam followers, and parts subject to heavy wear will be hardened. All hardened bearing surfaces will be ground.

7. Performance Requirements

a. The power supply unit must be capable of meeting all requirements of performance when operating with any of the following power sources:

(1) A three cell storage battery delivering current at voltages which vary between 5.25 and 6.1 volts depending upon the state of charge of the batteries.

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(2) A.C. power ffom a common supply of power having any frequency from 40 to 400 C.P.S. and having any of the following nominal voltages 70, 95, 120, 150, 190, 230, and 270 volts R.M.S. In service the voltage may vary above and below the nominal voltage by 15 percent.

(3) The drain of this equipment shall not exceed 7.5 amperes at 6.0 volts D.C. power. Power factor under load when operating with A.C. power shall not be less than 80% at frequencies of 40 to 100 C.P.S. and shall not be less than 60% at frequencies of 100 to 400 C.P.S.

b. The following voltages will be supplied when the unit is turned on:

(1) 5.6 volts D.C. at a drain of 330 milliamperes into a load consisting of filaments of type 3A4 tubes in series parallel arrangement. The voltage of these filaments shall not vary more than plus or minus 5% with variations of the A.C. power input voltage within the limits given in paragraph 7.a.(2) above. When operated with battery supply, this voltage shall not be below 5.1 volts nor above 6.1 volts when the input voltage is varied within the limits given in paragraph 7.a.(1) above. When the tube load is changed sotthat 220 milliamperes are drawn, the voltage shall remain within the limits of 5.2 and 6.3 volts D.C. The supply must be capable of delivering 440 milliamperes within the limits of 5.2 and 613 volts D.C. when operating with the A.C. voltage at its correct value and the ambient temperature below 35 degrees centigrade. The peak-to-peak ripple with the supply delivering any of the above currents shall not exceed 0.5 volts in the frequency range of 400 to 800 cps. At frequencies below 400 C.P.S. the ripple may increase at the rate of 3 db per octave as follows:

At 200 C.P.S. it may be .707 volts peak to peak, at 100 C.P.S. it may be 1.0 volts peak to peak, and at 80 C.P.S. it may be 1.1 volts peak-to-peak. For ripple voltages below 400 C.P.S., the component of ripple having a frequency in the range of 400 to 3000 C.P.S. shall not exceed .18 volts R.M.S.

(2) 150 volts D.C. at 40 milliamperes D.C. With a load consisting of a resistor adjusted to draw the best currents indicated in this paragraph, by passed by a 2 mfd. paper capacitor, the output will be free of oscillations. The voltage shall not be more than 163 volts nor less than 143 volts under any condition of input given in paragraph 7.a. above and with any load current from 5 to 40 milliamperes. The impedance looking into the power supply

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unit shall not exceed 40 ohms at any frequency in the range of 500 to 2200 cps, and shall not exceed 1000 ohms at frequencies of 5 to 500 cps and 2200 to 3500 cps. The ripple shall not exceed 0.7 volts peak to peak.

(3) 27 volts D.C. at 370 milliamperes (average current) D.C. With a load consisting of a 400 cps. interrupter having a 50% closed and 50% open cycle in series with an adjustable resistor adjusted for 10 watts of average power, the D.C. voltage will not be less than 29.7 volts nor less than 24.3 volts. This voltage willbe the voltage during the closed portion of the vibrator contact cycle and will be held for any variation of the input voltage within the limits given in paragraph 7.a. above. This supply will be capable of delivering a minimum of 500 milliamperes continuously into a 15 ohm continuously connected load for 5 seconds followed by full normal load for 1 minute or more under any operating condition and with any input condition given in paragraph 7.a. above. The power supply must be capable of delivering this starting load followed by the full load, once a minute for five consecutive minutes without damage to itself. This starting load may be applied to the power supply with the supply energized, or may be applied before power is connected to the power supply and left connected when power is applied to the power supply unit. The ripple voltage of the supplied 10 watts shall not exceed 7 volts peak to peak measured during the closed interval of the interrupted supply.

The circuits of this output must be such that interruptions of this circuit will not inject ripple into the other supply voltages which exceed the limits previously given.

(4) The transformer of the power supply unit will be equipped with a secondary winding capable of supplying 6.3 volts A.C. RMS at 1.8 amperes RMS into a resistive load. With any input previously specified and any load from 0.9 to 1.8 amperes, the voltage of this winding shall not be less than 5.7 volts not more than 6.9 volts. It is assumed that this winding will be used for this load when the 5.6 volts D.C. output specified in paragraph 7.b.(1) above is disabled.

(5) All voltages will be within limits of specification within 5 seconds of the application of power to the unit.

c. Circuits will include the following:

(1) A transformer with proper taps for usage with any of the A.C.

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supply voltages specified. Selection of the proper tap is to be accomplished by use of a single seven contact rotary switch. No off position need be supplied.

(2) Rectification may be obtained by use of miniature tube such as type 6X4 or full wave selenium stacks.

(3) In D.C. power operation, a full wave interrupter type vibrator having a nominal frequency of 115 cps will be employed. The vibrator must be capable of delivering rated power for 2000 hours and withstand 2000 starts during this 2000 hour life.

(4) Suitable fuses will be provided in the A.C. line such that the equipment is protected from damage in the event of connection to any of the specified power sources with the switch combination of the power supply unit set for any other specified power source. The fuses will be of such size that a heavy load on any output voltage will blow the fuse before the power supply unit is damaged, in any specified condition of operation.

(5) Outputs shall be connected to the six prong plug cited in paragraph 6.g. above as shown on drawing 125501.

d. All units manufactured to this design must be capable of performing the following duty:

(1) Continuous duty for 200 hours in any ambient temperature from minus 28 degrees centigrade to plus 40 degrees centigrade in any humidity with no lubrication, no adjustment, no overheating, and no malfunction of any part. One hundred of these hours are to be operation with D.C. battery supply and 100 hours are to be with A.C. power source. During this period any output may remain at any value of load from no lead to full load as defined in paragraph 7.b. of specification.

(2) Operation within the limits of this specification after 10 free falls of the unit in its case for 36 inches to a concrete floor, six inches thick. Drops are to be made with the unit landing on each size and each corner of the case.

(3) Voltage and current are to be within limits of specification within 10 seconds after being turned on after the unit has remained unoperated for 3 hours at a temperature minus 28 degrees centigrade. The outputs must remain continuously within specification as the temperature is slowly raised through all values to a temperature of 40 degrees centigrade. No adjustment shall be required during this interval for the purpose of remaining within the limits of specification.

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(4) The voltages specified in paragraph 7.b. shall remain within the limits given in that paragraph when the input voltages are varied over the range of limits given in paragraph 7.a., at all frequencies given in paragraph 7.a.

(5) When tested in accordance with the requirements of Specification JAN-I-225 for noise interference, the maximum radiated field strength noise shall not exceed the following with rod antenna at one foot distance:

Frequency	Maximum Equivalent Noise Field Microvolts
.1 to .4 mc.	.16
.4 to 2.0 mc.	.03
2.0 to 20.0 mc.	.16
20 to 40 mc.	.03

When tested in accordance with JAN-I-225, the conducted noise on the line cord, battery cable or connecting cable shall not exceed the following:

Frequency	Maximum Equivalent Noise
.1 to .4 mc.	3 microvolts
.4 to .5 mc.	.7 microvolts
.5 to 2.0 mc.	3 microvolts
2.0 to 20.0 mc.	.7 microvolts
20 to 40 mc.	3 microvolts

8. Variation of Limits

a. It shall be the right of the prime contractor to change certain limits of performance of the power supply unit at two specified times in the period of the development. Changes may be made at other times during the development by mutual consent of the prime contractor and the subcontractor.

b. The performance requirements may be changed by the prime contractor within the following limits at the time specified for changes:

(1) The 5.6 volts D.C. output may be changed to any voltage from 1.4 to 25 volts D.C. The normal load may be made any value from 0.4 watts to 2.5 watts while maintaining the same relative limits of voltage variation and ripple expressed as a ratio to the output voltage. Independent of these variations the ripple voltage may be required to be reduced by 50% expressed as a ratio to the output voltage.

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(2) The 150 volt D.C. output may be raised so that the limits of load are 20 to 60 milliamperes. The ripple voltage expressed as a percentage of the output voltage may be reduced 50%.

(3) The 27 volt output may be varied between the limits of 5.6 volts and 150 volts. The power delivered at this voltage may be raised to 12 watts or lowered to 6 watts while maintaining the same limits of voltage variation exper[redacted] as a ratio to voltage. The requirements for ripple expressed as a ratio of the nominal voltage may be reduced by 50%. The load during the starting period will vary as the square of the nominal supply voltage. The starting resistance may be varied from this square of voltage value by 50%.

(4) The 6.3 volt supply may be varied to any voltage from 1.4 to 25 volts and may have the power required varied from 3.8 watts to 15 watts. The regulation under load expressed as a ratio of the nominal voltage will not be varied.

9. Requirements for Parts Lists

a. The requirements of this paragraph refer to parts lists which must accompany the final submission of equipment under this specification.

b. These parts lists are to be suitable for use as a source of complete information for the procurement and inspection of parts and materials normally purchased for use in assembling these equipments. The information must be such that parts which conform to this information may be used interchangeably with those in the submitted models and with the parts, the models will be capable of meeting all limits of this specification. All non-fabricated components are to be included in this list. All fabricated components which are to be made in the plant of J.H. Bunnell & Company are not to be included in this list.

c. The following information will be given whenever applicable:

(1) Type (capacitor, paper, mineral oil, metal case, type CP51EF501V per Specification JAN-C-25).

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(2) Size (approximately 3/4 inch diameter by 1½ inches tall)

(3) Capacity (1.0 microfarads at 200 VDCW)

(4) Tolerance (plus 15 minus 10 percent)

(5) Manufacturer (Cornell Dubilier Co., Plainfield, N.J.)

(6) Cost of each in quantities for 100 units (two employed per equipment. Unit cost at quantity of 200 each $1.93).

(7) Manufacturer's type number (ARK-2 not difference from JAN-C-25 unit)

(8) Special requirements (Cadmium plated)

10. Requirements of Drawing

a. Drawings will be sufficiently complete to give all information needed to fabricate these equipments in production quantities.

b. Where completeness of drawing requires, the information in parts lists specified in paragraph 9 above will be repeated on the drawings. Each assembly drawing will include, either on the drawing, or as a separate sheet identified as part of that assembly drawing, a list of parts, subassemblies, and materials required to complete the assembly. Each detail drawing will identify the material required to fabricate the part. Each part or assembly which is treated and/or finished will include instructions for treating or finishing.

c. Whenever special manufacturing processes are employed, the information and instruction for such processes will be given completely on the applicable drawing. Such instructions will be complete so that a skilled operator with the indicated machinery will have all information needed to perform the indicated work.

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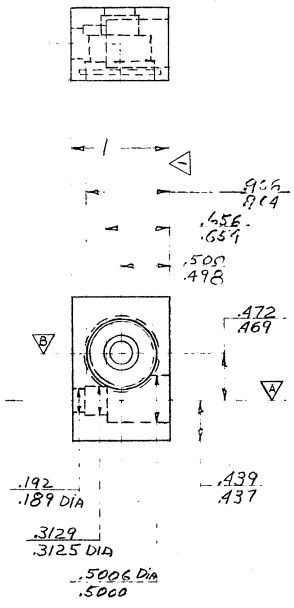

TRUARC RETAINING RING SERIES #5000-87
GROOVE DIMENSIONS .922 +.003 DIA. X .016 +.003 -.002 WIDE

.375 O.D. X .1880/.1875 LR OILITE BUSHING
PRESS FIT (1) REQ

FACES 2 + 3 SHALL BE SQUARE TO FACE 1 + TO EACH OTHER WITHIN .0002/INCH

Ⓒ A SHALL BE SQUARE TO FACE 1 + PARALLEL TO FACE 4 WITHIN .0002/INCH

Ⓒ B SHALL BE SQUARE TO FACE 2 + PARALLEL TO FACE 3 WITHIN .0002/INCH

ALL DIAMETERS SHALL BE CONCENTRIC WITHIN .002 T.I.R.

(1) REQ

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USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	STAT
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ISSUE					
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DATE			FINISH	DRAWN [illegible] DATE 4/28/72	ENG. APP. DATE
DFTSMN		GROSS WT.		CHECKED DATE	APPROVED DATE
CHKD				DWG. NO. B-125558	ISSUE XP
ENG.					

ALBANY, N.Y. NO. 1408M K&E CO., N.Y. ●

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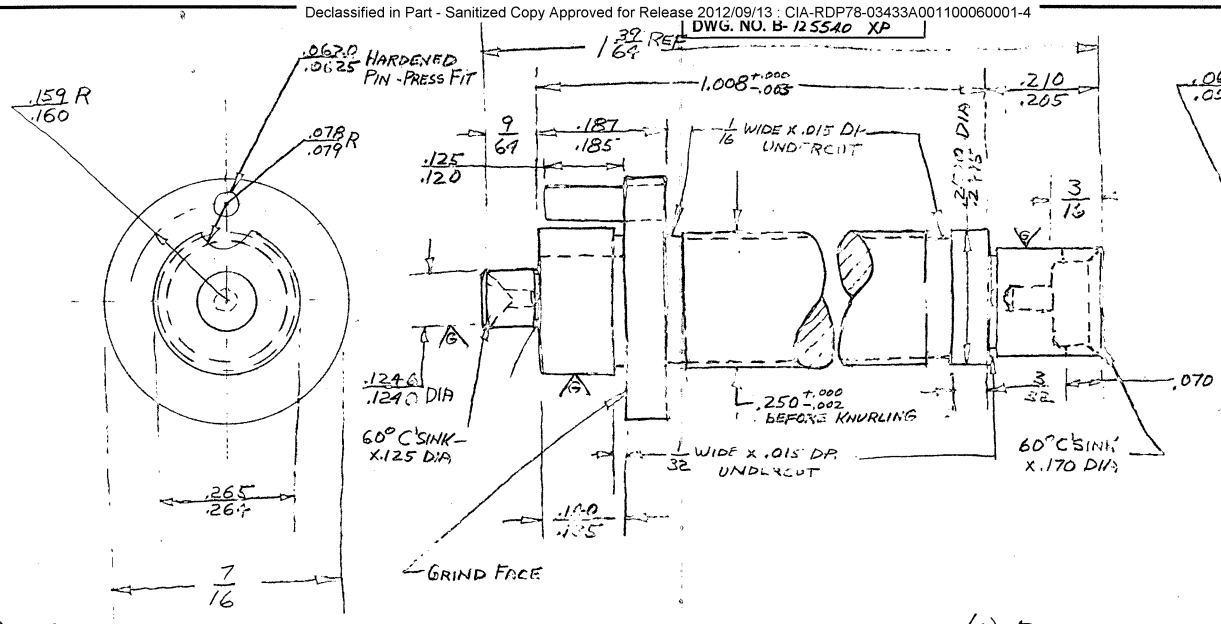

(1) REQ

△ - GRIND TO GIVEN SIZE

TURN BETWEEN CENTERS, CARBURIZE + GRIND AS SHOWN

ANGULAR RELATION BETWEEN PIN + SLOTS - RANDOM

ALL DIAMETERS CONC. WITHIN .005 T.I.R

KNURL PER SPECIFICATION

NO. OF TEETH - 28 FOR 1...

INCLUDED ANGLE - 90°

DEPTH OF TEETH - .012 APPROX.

TYPE KNURL - STRAIGHT

CARBURIZE AT 1600°F - 3 HRS

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TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	USED ON
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DATE		GROSS WT.		DRAWN MR DATE 4/11/52 ENG. APP. DATE
DFTSMN				CHECKED DATE APPROVED DATE
CHKD				DWG. No. B-125540 ISSUE XP
ENG.				

ALBANY N.Y. NO. 1988M KAECO, N.Y. U.S. PAT. OFF.

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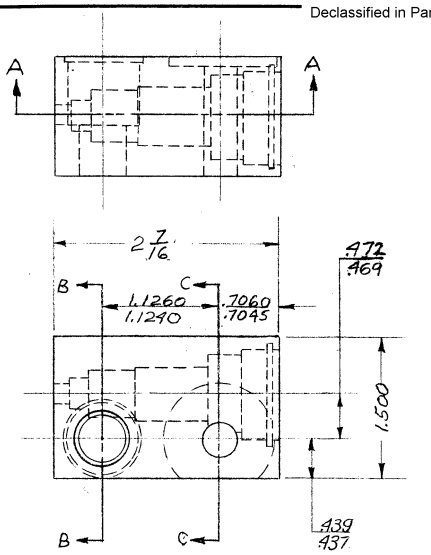
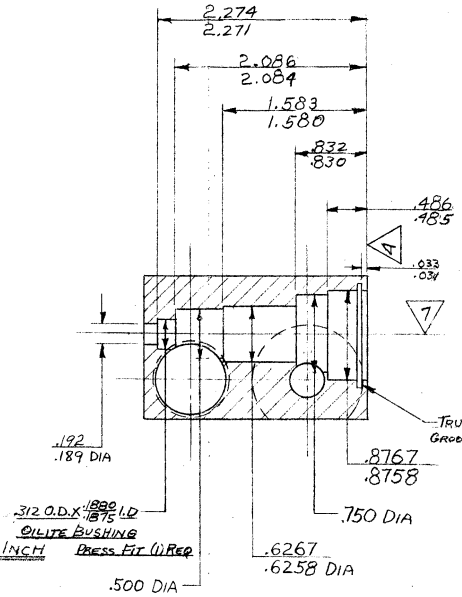
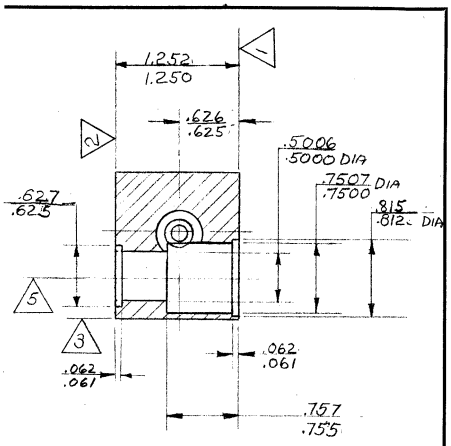
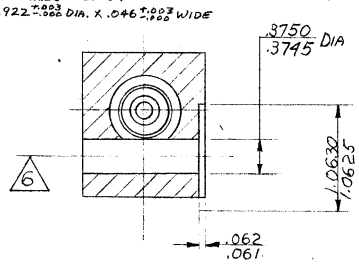




SECTION AA



SECTION BB



SECTION CC

FACES 1 + 2 SHALL BE PARALLEL WITHIN .0002 PER INCH

FACES 1 2 4 SHALL BE SQUARE TO FACE 3 WITHIN .0002 PER INCH

℄ 5 6 1 SHALL BE PARALLEL TO FACE 3 WITHIN .0002 PER INCH

℄ 5 6 SHALL BE PARALLEL WITHIN .0005 PER INCH

℄ 5 6 SHALL BE SQUARE TO FACE 1 WITHIN .0002 PER INCH

℄ 1 SHALL BE SQUARE TO FACE 4 WITHIN .0002 PER INCH

ALL DIAMETERS SHALL BE CONCENTRIC WITHIN .0002 T.I.R.

(1) REQ

TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	USED ON
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BLOCK, GEAR

ISSUE			
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DFTSMN			
CHKD			
ENG.			

DRAWN STAT DATE 4/7/52 ENG. APPR. STAT
CHECKED DATE APPROVED DATE

DWG. No. B- 125535 ISSUE XP

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MFR. U.S. PAT. OFF.

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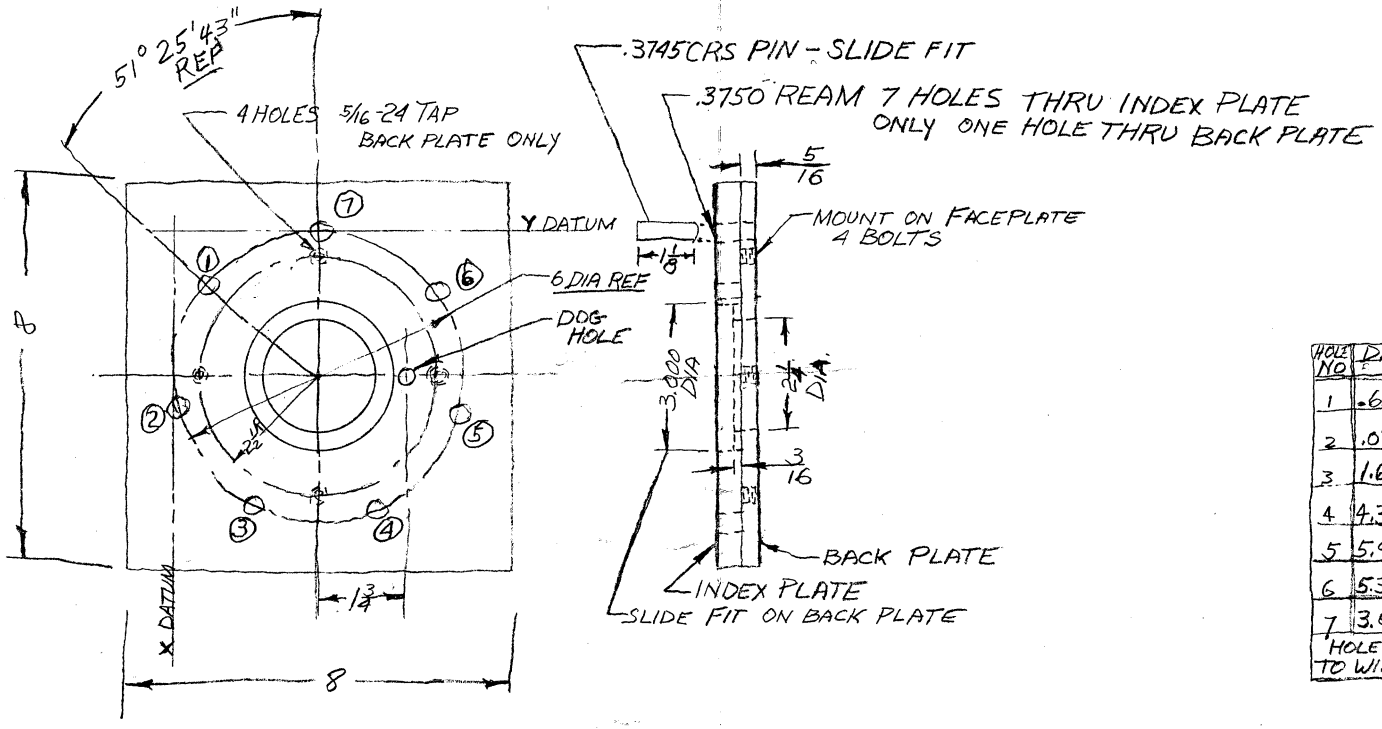

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4	4.3017	5.7029
5	5.9248	3.6676
6	5.3455	1.1295
7	3.0000	.0000

HOLE DEMENSIONS TO WITHIN ±.003

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED		
DEC. DIM. ±	FRAC. DIM. ±	ANG. DIM. ±

SCALE 2:1

MATERIAL C.R.S PLATE

FINISH

NET WT.

GROSS WT.

FACE PLATE FOR 7 LEAD THREAD. STAT

ISSUE			
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ENG.			

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CHECKED		DATE		APPROVED		DATE	

DWG. No. B- 125497 ISSUE XP

"ALBANENE" NO. 1908M K&E CO., N.Y. U.S.A. PAT. APP.

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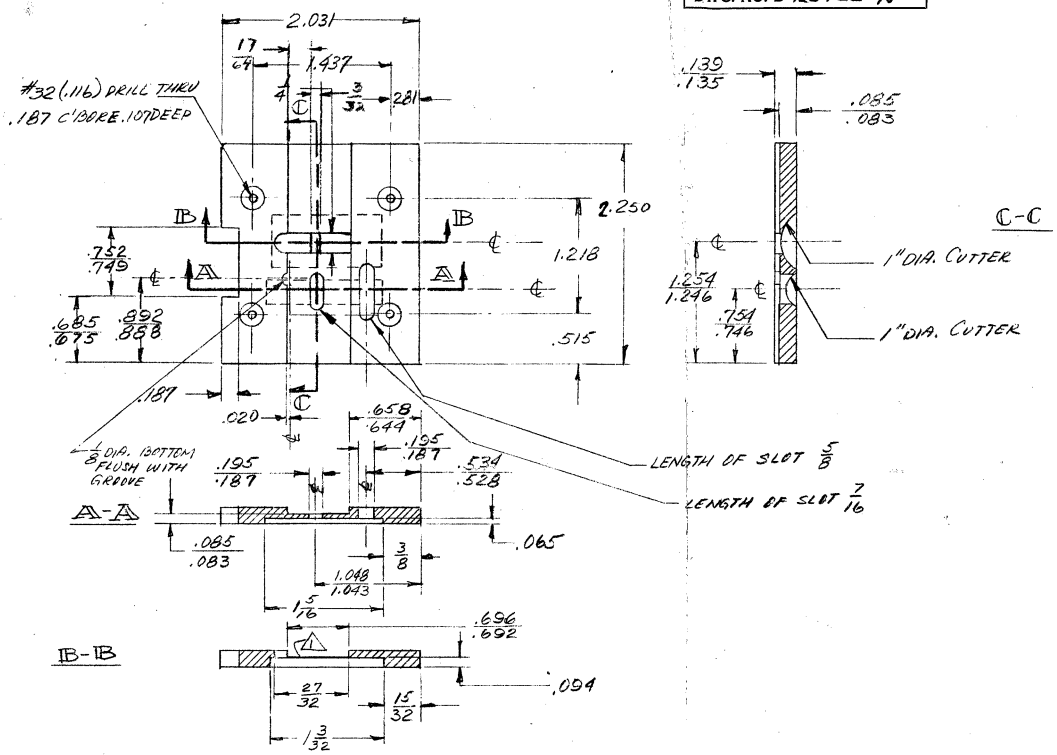
DWG. NO. B-125422 XP



⚠ .696 GROOVE SHALL BE SMOOTH, TRUE & FREE FROM TOOL MARKS.

TOLERANCES UNLESS OTHERWISE DESIGNATED	
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± —	
SCALE	—
MATERIAL	ALUM 245-T3
FINISH	SAND FACES LIGHTLY
NET WT.	
GROSS WT.	
USED ON	STAT GUIDE OK BC
DRAWN	CB 17 AUG 51
CHECKED	
ENG. APP.	
APPROVED	
DWG. No.	B-125422 XP

ISSUE | CHANGE | DATE | DFTSMN | CHKD | ENG.

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"ALBANENE" NO. 196M K&E CO., N.Y. U.S. PAT. OFF.

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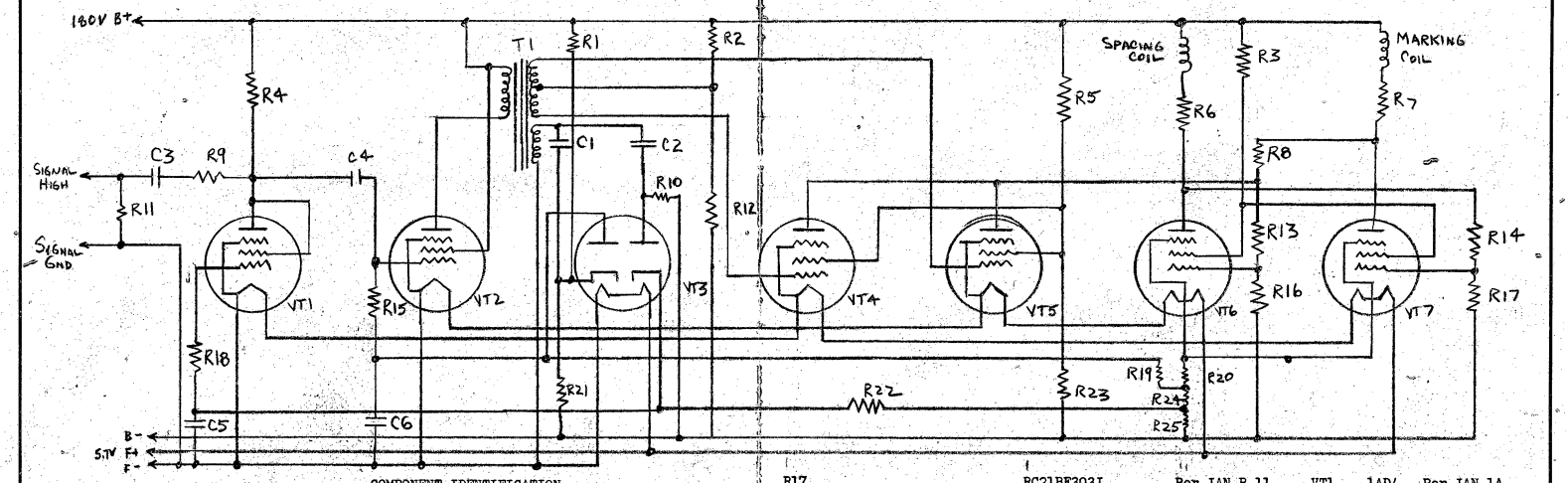
DWG. NO. B- 125597-XP



COMPONENT IDENTIFICATION

R1			RC21BF155J	Per JAN-R-11	R17			RC21BF303J	Per JAN-R-11	VT1	1AD4	Per JAN-1A
R2			RC21BF165J	" "	R18			RC21BF205J	" "	VT2	1AD4	" "
R3			RC21BF223J	" "	R19			RC21BF105J	" "	VT3	CK5829	(Raytheon)
R4			RC21BF105J	" "	R20			RC21BF271J	" "	VT4	1AD4	Per JAN-1A
R5			RC21BF623J	" "	R21			RC21BF364J	" "	VT5	1AD4	Per JAN-1A
R6	5100	5W	Ward Leonard 5x5100	" "	R22			RC21BF105J	" "	VT6	3A4	Per JAN-1A
R7	5100	5W	Ward Leonard 5x5100	" "	R23			RC21BF244J	" "	VT7	3A4	Per JAN-1A
R8			RC21BF303J	" "	R24			RC21BF271J	" "			
R9			RC21BF514J	" "	R25			RC21BF261J	" "			
R10			RC21BF105J	" "	C1	.005	60V	CM35B512M	JAR-C-5			
R11			RC21BF432J	" "	C2	.005	60V	CM35B512M	"			
R12			RC21BF204J	" "	C3	.005	150V	CM35B512M	"			
R13			RC21BF753J	" "	C4	.005	150V	CM35B512M	"			
R14			RC21BF134J	" "	C5	.0002	60V	CM30B202M	Per JAN-C-5			
R15			RC21BF205J	" "	C6	.0002	60V	CM30B202M	" "			
R16			RC21BF623J	" "	T1	JHB #A-125599-XP		(Transformer)				

USED ON

TOLERANCES UNLESS OTHERWISE DESIGNATED
DEC. DIM. ± FRAC. DIM. ± ANG. DIM. ±

SCALE | MATERIAL | NET WT. | FINISH | GROSS WT.

TENTATIVE CIRCUITRY OF AMPLIFIER (SCHEMATIC)

STAT

ISSUE					
CHANGE					
DATE					
DFTSMN					
CHKD					
ENG.					

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MR	3/7/52	MAC	3/7/52
CHECKED	DATE	APPROVED	DATE

DWG. No. B-125597-XP ISSUE

ALBANENE ENGINEERING CO., N.Y.

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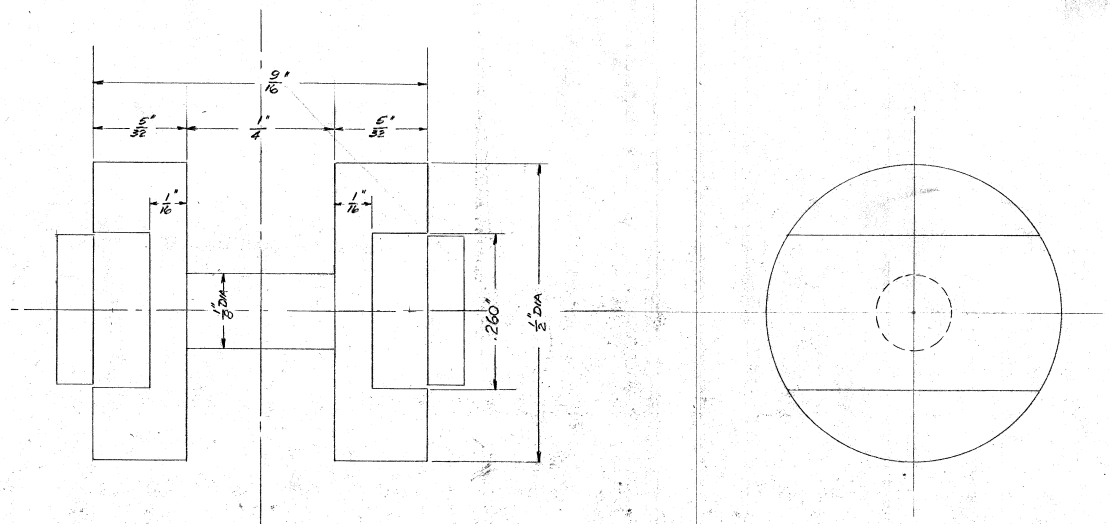

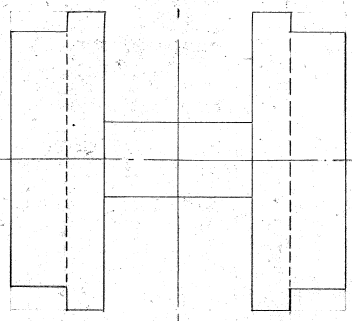

DWG. NO. C- ISSUE

WINDING INFORMATION:
ABOUT 8000 TURNS OF # 44 AWG ENAMELED COPPER WIRE -
RANDOM WOUND - CLOCKWISE
USE #36 AWG WIRE FOR PIGTAILS SPLICED TO THE WINDING

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DEC. DIM. ±	FRAC. DIM. ±	ANG. DIM. ±

SCALE 8/1

MATERIAL

STARTING COIL ASSY. FOR TUNING FORK

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CHANGE
DATE
DFTSMN
CHKD
ENG.

NET WT.

FINISH

GROSS WT.

DATE 10-10-57 ENG. APP. DATE STAT

CHECKED DATE APPROVED DATE

DWG. No. C-125505 ISSUE

"ALBANENE" NO. 1900M KAROL-N.Y. 8

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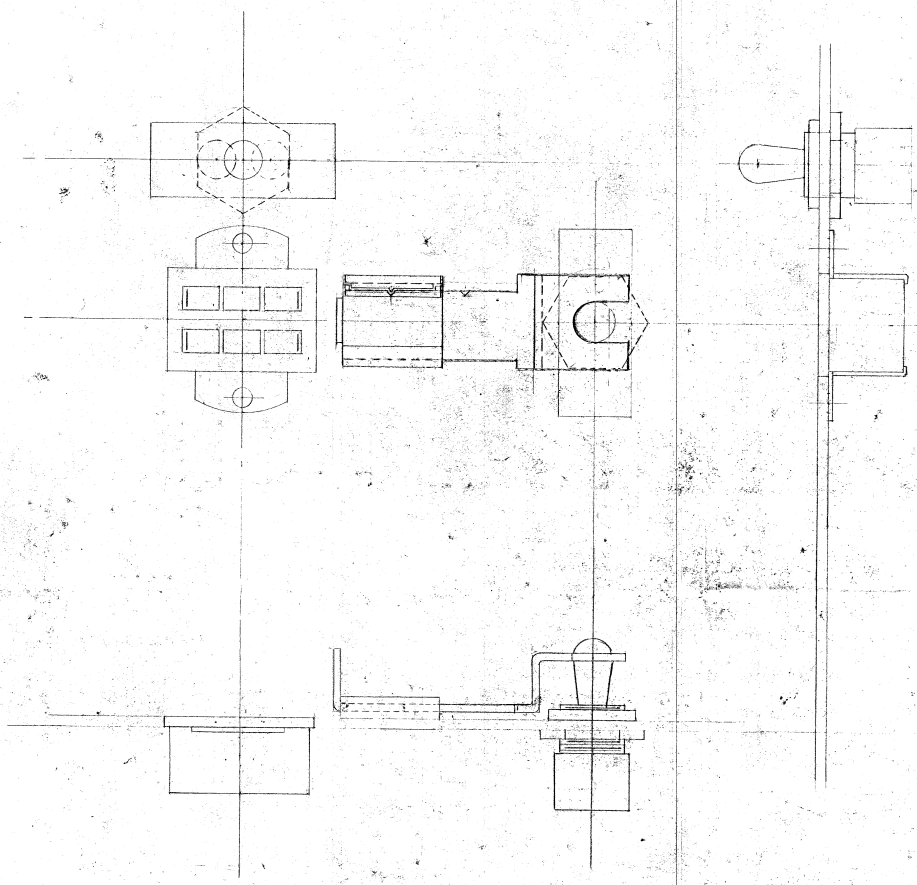

DWG. NO. C-125 503 ISSUE XP

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SCALE 2/1

MATERIAL

INTERLOCK ASSEMBLY

NET WT.

FINISH

GROSS WT.

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CHECKED	DATE	APPROVED	DATE

ISSUE

CHANGE

DATE

DFTSMN

CHKD

ENG.

DWG. NO. C-125 503 XP

"ALBANENE" No. 1418M 8 & CO., N. Y. 6

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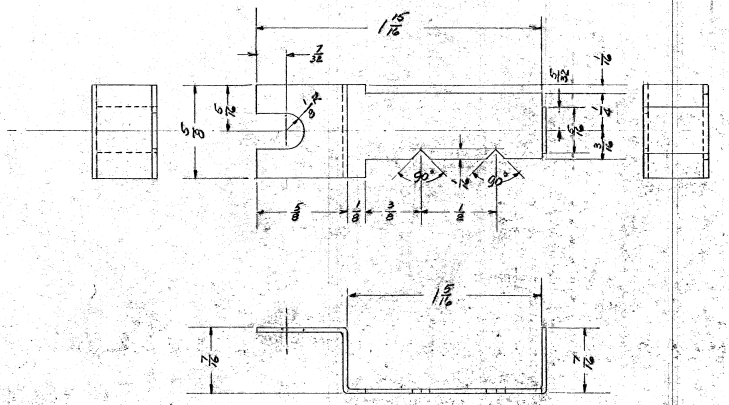
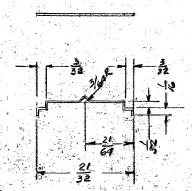
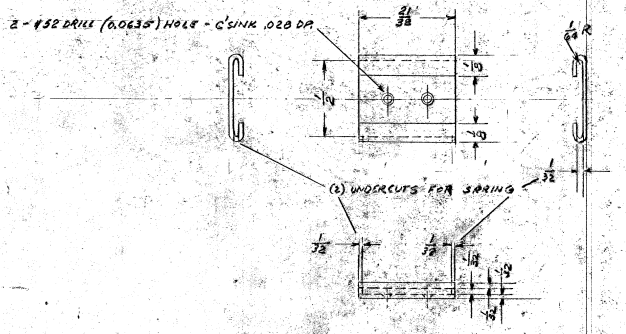


INTERLOCK SLIDE -MATERIAL : 25-H18 - ALUMINUM 1/32" THICK



DETENTION SPRING - MATERIAL : #12 (0.029") MUSIC WIRE

DWG. NO. C-125 504 ISSUE XP



INTERLOCK GUIDE -MATERIAL : 25-H18 ALUMINUM 1/32" THICK

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ISSUE
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DATE
DFTSMN
CHKD
ENG.

DWG. No. C-125504 ISSUE XP

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DWG. C-125506-XP

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SCALE	DRAWN	
	1ST JOB NO.	
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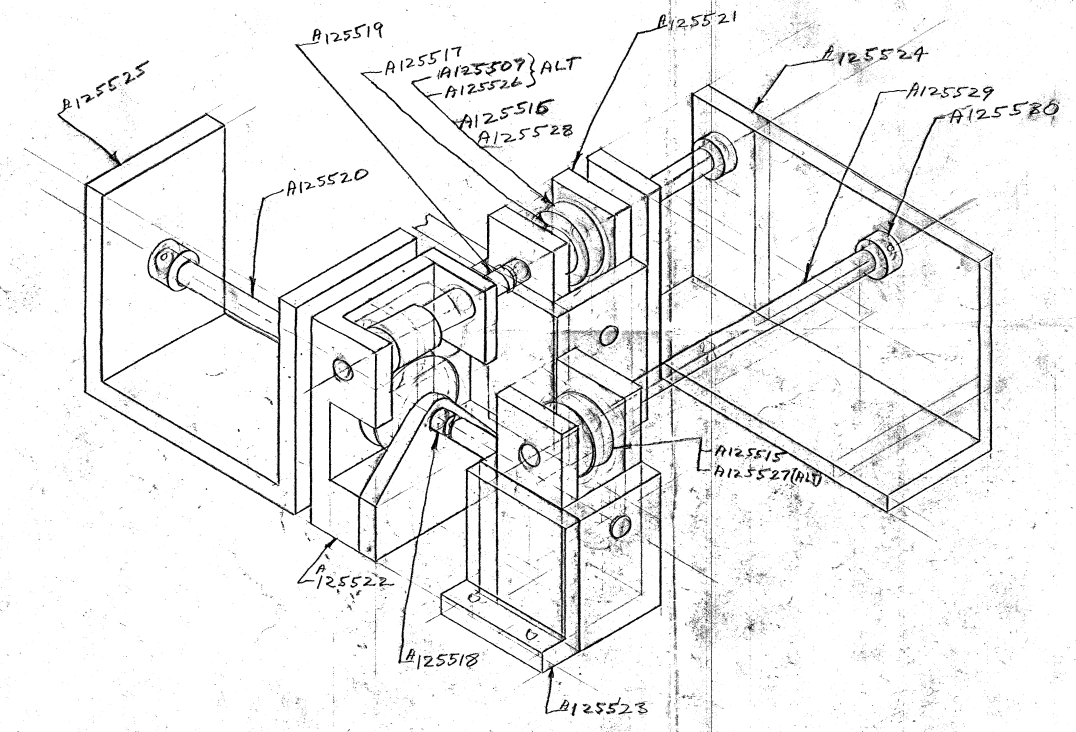

ASSEMBLY Model 2

STAT

3-4-52

C-125506-XP

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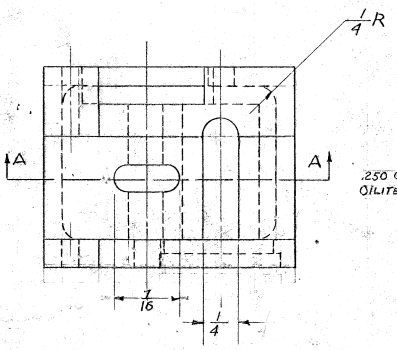
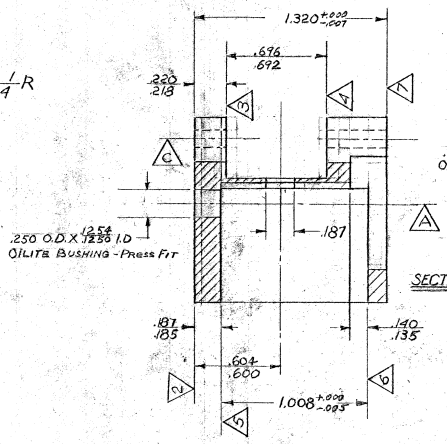
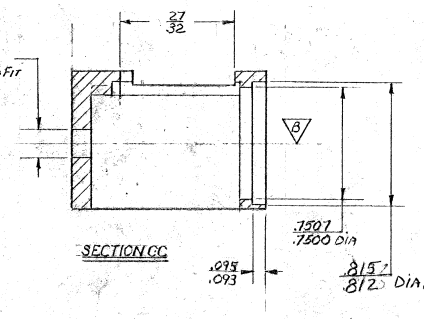
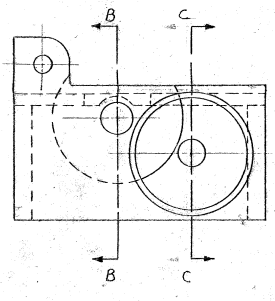


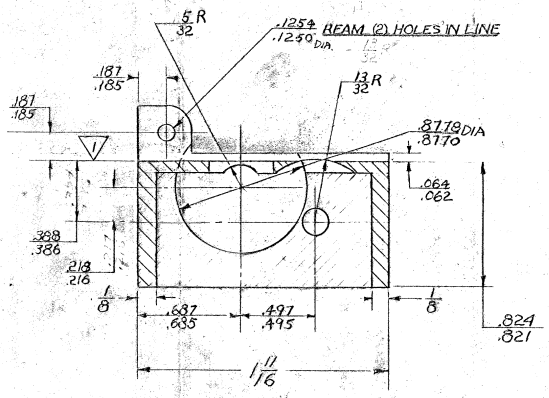


SECTION BB



SECTION CC





SECTION AA

DWG. NO. C-125548 ISSUE XP

FACE △1 + △2 SHALL BE THE WORKING FACES
FACE △1 SHALL BE SQUARE TO FACE △2 WITHIN .0002 / INCH

FACES △3,4,5,6,7 SHALL BE PARALLEL TO FACE △2 + SQUARE TO FACE △1 WITHIN .0005/INCH
⊏ △4 + △5 SHALL BE PARALLEL TO FACE △1 + SQUARE TO FACE △2 WITHIN .0005/INCH

⊏ △6 SHALL BE SQUARE TO FACE △2 + PARALLEL TO FACE △1 WITHIN .0005/INCH

ALL DIAMETERS SHALL BE CONCENTRIC WITHIN .0005 T.I.R

STAT

(1) REQ

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TOLERANCES UNLESS OTHERWISE DESIGNATED	SCALE	MATERIAL	
DEC. DIM. ± .005 FRAC. DIM. ± 1/64 ANG. DIM. ± –	2:1	24S-T4 ALUM	BLOCK - DISTRIBUTOR

ISSUE			
CHANGES		NET WT.	FINISH
DATE			DATE 9/23/52 ENG. APP. STATE
DFTSMN		GROSS WT.	DATE APPROVED DATE
CHKD			
ENG.			DWG. NO. C-125548 ISSUE XP

"ALBANENE" NO. 1400M 9 & CO., N.Y. 9

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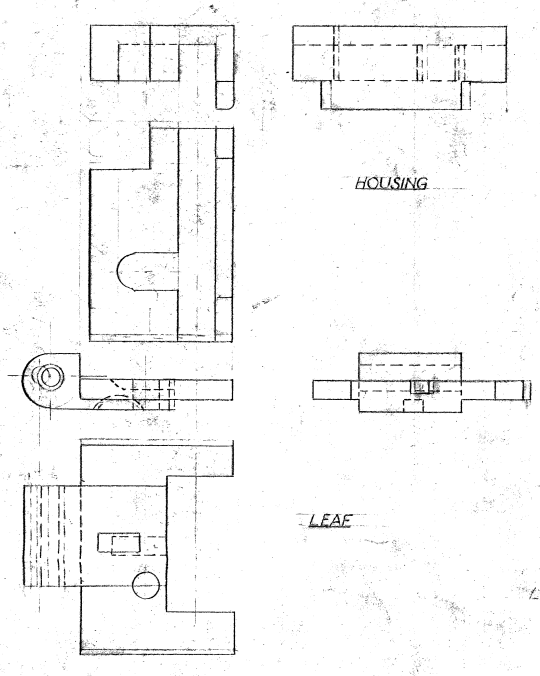
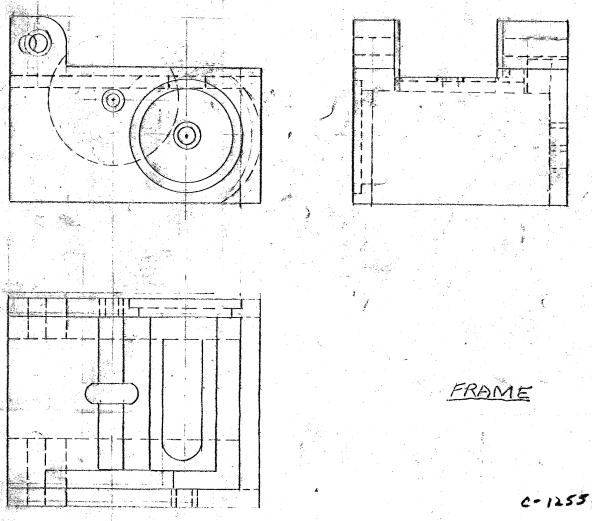


HOUSING

LEAF



FRAME

C-125564-XP

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E. PTS. LIST			
M. PTS. LIST			DISTRIBUTOR
SCALE 2:1	DRAWN [illegible]		
CH'K'D	APP'D	ENG.	DWG C-125564 XP

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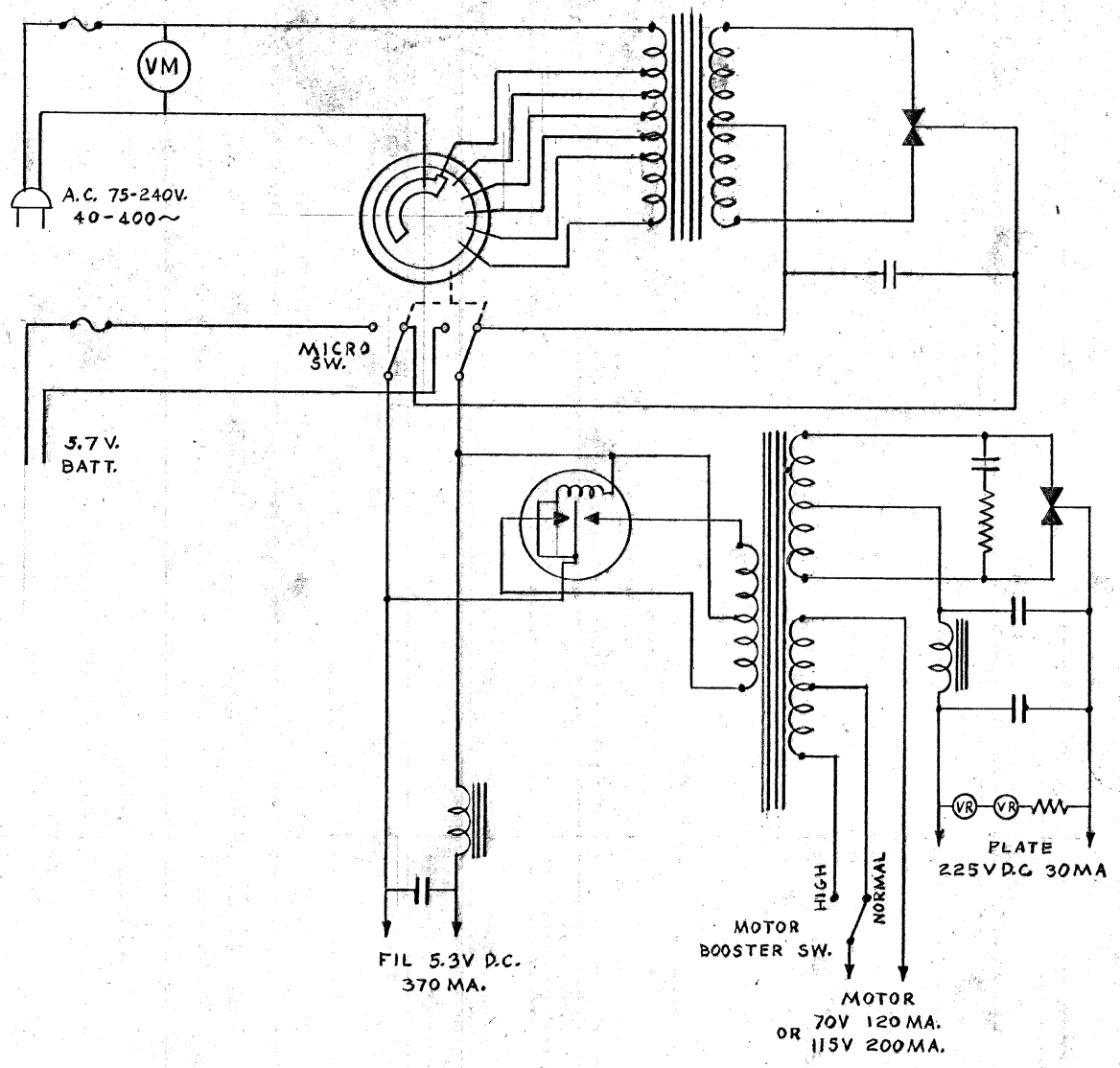

STAT

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DESIGN SCHEMATIC DRAWING
POWER SUPPLY UNIT
DWN 1/28/52 1/31/52
B 125598-XP

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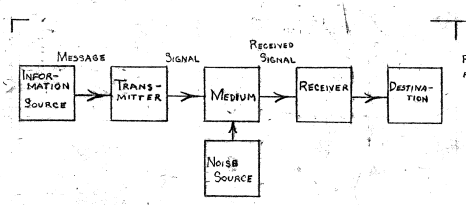


FIG 1 GENERAL COMMUNICATION SYSTEM

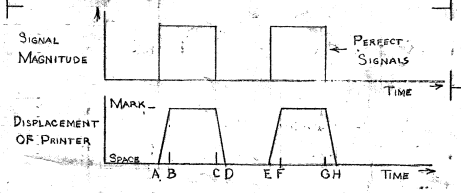


FIG 2 PRINTING SEQUENCE

(a)

$$E = \frac{E_{top}}{2}{}^{(1)} + E_{top}\frac{2}{\pi} \times \sin 2\pi 157 {}^{(2)} + E_{top}\frac{2}{\pi}\left(\frac{1}{3}\right)\sin(3)2\pi 157 {}^{(3)} + E_{top}\frac{2}{\pi}\left(\frac{1}{5}\right)\sin(5)2\pi 157 {}^{(4)} + E_{top}\frac{2}{\pi}\left(\frac{1}{7}\right)\sin(7)2\pi 157 {}^{(5)} + \cdots$$

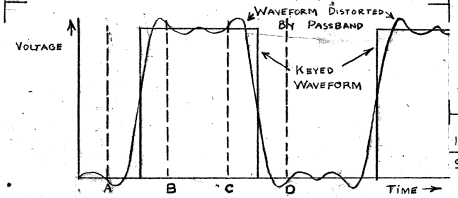


FIG.3 BANDPASS DISTORTION OF WAVEFORM

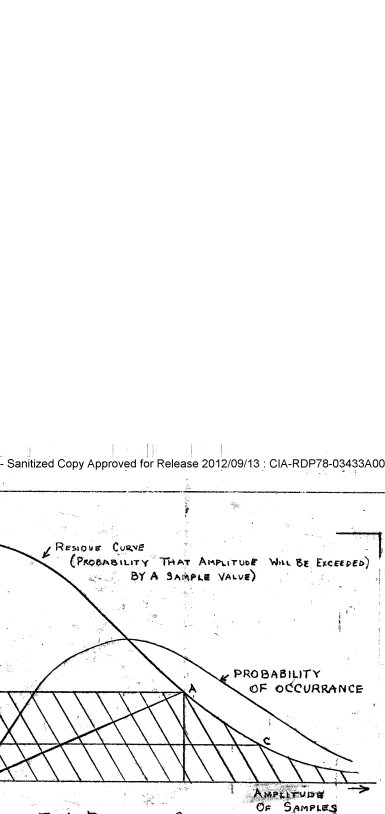


FIG.4 PROBABILITY CURVE

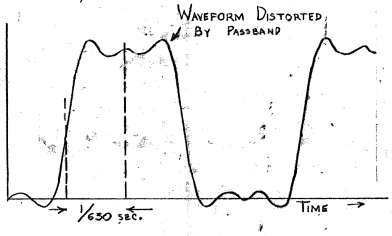
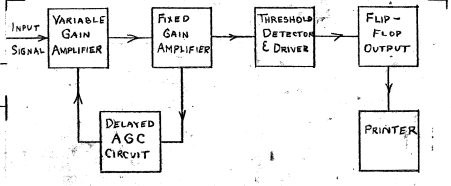


FIG.5 MARKING INTERVAL OF MINIMUM POWER



BLOCK DIAGRAM OF BREADBOARD MODEL

C125406-XP

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IST JOB NO. 7100-3		
E. PTS. LIST		
M. PTS. LIST		ILLUSTRATIONS FOR NOISE TEST REPORT
SCALE NONE	DRAWN 12/1/51 M.R.	
CH'K'D	APP'D	ENG.
		DWG. C-125406-XP

ISSUE 1/7/52

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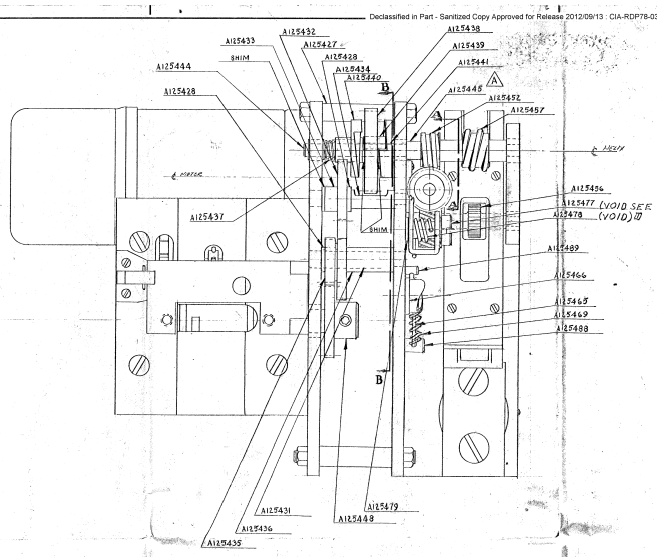

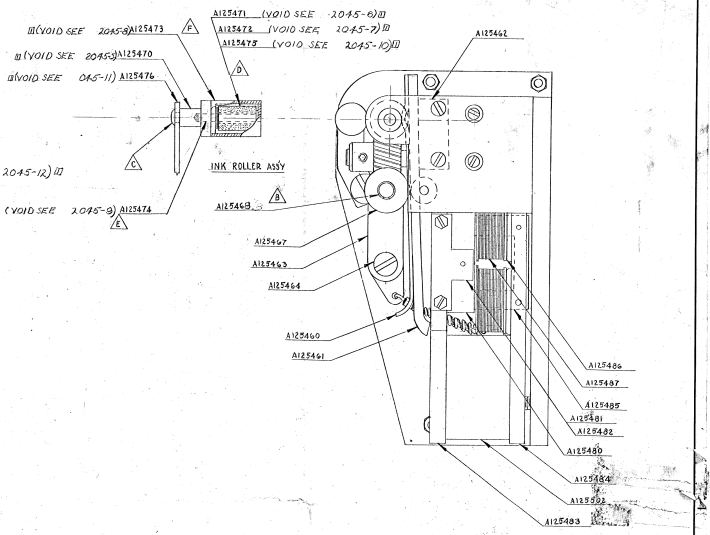

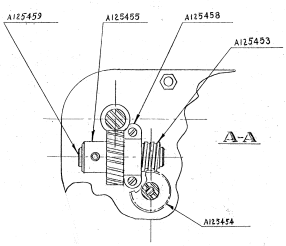

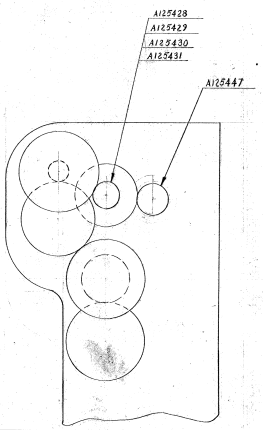

DWG. NO. D-125404 ISSUE XP

A P.F. TO SHAFT

B RIVET TO ARM # A125463

C BRAZE

D INSERT HUB # 2045-7 (1) INTO ROLLER # 2045-10 (1) PLACE FLANGE # 125455 ON SHOULDER OF HUB & SPIN OR ROLL OVER SECURELY.

E PLACE INK ROLLER ASSEMBLY 2045-19 & SHIELD 2045-8 ON SHANK 2045-5 & FASTEN WITH SPINDLE SCREW 2045-9.

STAT

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ISSUE				
VOID PER	A-125475XP	R-125472XP	2045-6 R-2045-9	CHANGE NOTIE TO CONFORM WITH 2045-19 2-18-53
A-125470YP	A-125471XP	R-125473XP	2045-7 R-2045-10	
A-125476XP	A-125472XP	2045-9 R-2045-11		
A-125474XP	A-125475XP	2045-8 R-2045-12		
DATE	11-29-53			
DFTSMN				
CHKD				
ENG.	W. N.K.C.			

TOLERANCES UNLESS OTHERWISE DESIGNATED
DEC. DIM. ± FRAC. DIM. ± ANG. DIM. ±

SCALE 2/1
NET WT.
GROSS WT.
MATERIAL
FINISH

USED ON: MODEL #1 ASSEMBLY

DRAWN W. Nowicki DATE ENG. APP. DATE
CHECKED DATE APPROVED DATE

DWG. NO. D-125404 ISSUE XP

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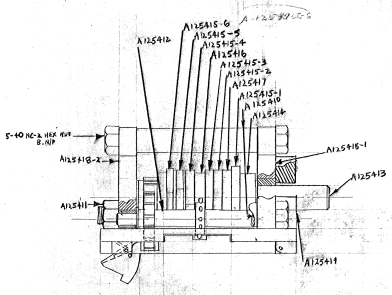

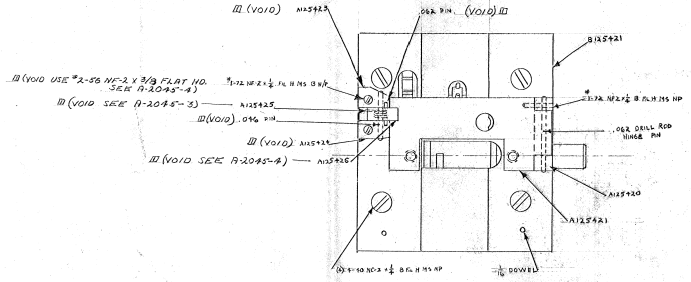

DWG. NO. D-125408 REV XP

STAT

LOOK FOR CONTOUR CHANGES OF PARTS ON PARTS DRWG. D.C.

This document is part of an integrated file. If extracted from the file it must be subjected to individual systematic review.

ISSUE			
	III VOID PTS: A-125424GXP A-125423XP A-125424XP A-125425XP	ADD PTS A-2045-2 A-2045-3 A-2045-4	#2-56 NF-2 X 3/8 FLT. HD SCREW. .094 PIN .062 PIN #4-32 X 1/4" FIL. HD. SCREW.
DATE	1-30-58		
DRAWN			
CHKD			
ENG.	R.K.C.		

TOLERANCE UNLESS OTHERWISE DESIGNATED		
DEC. DIM. ±	FRAC. DIM. ±	ANG. DIM. ±

SCALE	MATERIAL	USED ON
NET WT.		DISTRIBUTOR ASSEMBLY MODEL #1
GROSS WT.	FINISH	DRAWN DLS 1/6/58 APPR. DATE CHECKED DATE APPROVED DATE

DWG. NO. D-125408-XP ISSUE

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